CHECKLIST OF THE VASCULAR PLANTS OF WESTMORELAND COUNTY, PENNSYLVANIA

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ABSTRACT

Westmoreland County has been botanized since the mid 1800s, but a checklist of the county's vascular flora has not previously been published. A search of herbaria augmented by targeted fieldwork has resulted in a list of 1452 taxa of native and naturalized plants comprising 599 genera and 142 families. The five families with the largest number of species are Asteraceae, Cyperaceae, Fabaceae, Poaceae, and Rosaceae. Carex, Quercus, Rubus, Symphyotrichum and Viola are the largest genera. There are 346 non-native species that have been introduced mainly from Europe and Asia. This checklist recognizes 1347 species of Angiosperms, 17 species of Gymnosperms and 54 species of Pteridophytes. By The Nature Conservancy's system of conservation status designations, 76 species have global or state ranking.

RESUMEN

El condado de Westmoreland ha sido herborizado desde la mitad de los 1800s, pero no se ha publicado previamente ningún catálogo de flora vascular del condado. Una búsqueda en herbarios incrementada con trabajo de campo ha dado como resultado una lista de 1452 taxa de plantas nativas y naturalizadas que se incluyen en 599 géneros y 142 familias. Las cinco familias con mayor número de especies son Asteraceae, Cyperaceae, Fabaceae, Poaceae, y Rosaceae. Carex, Quercus, Rubus, Symphyotrichum y Viola son los géneros más grandes. Hay 346 especies no nativas que han sido introducidas principalmente de Europa y Asia. En el catálogo se reconocen 1347 especies de Angiospermas, 17 especies de Gimnospermas y 54 especies de Pteridophytas. Según las designaciones de status de conservación mediante el sistema de la Nature Conservancy, 76 especies tienen rango global o del estado.

INTRODUCTION

Even though Pennsylvania lacks checklists for most of its counties, the vascular flora known thus far is quite diverse. Rhoads and Klein (1993) reported 3318 taxa of vascular plants for the state, including 2076 native and 1242 introduced. Approximately 27 of Pennsylvania's 67 counties have floras completed, but some are theses and surveys and therefore unavailable to the public. The exact number of genera and species in the flora of Westmoreland County was not previously known because a checklist had never been widely or recently published. Such checklists provide baseline information that can be used to monitor environmental changes and guide conservation decisions.

Site Description

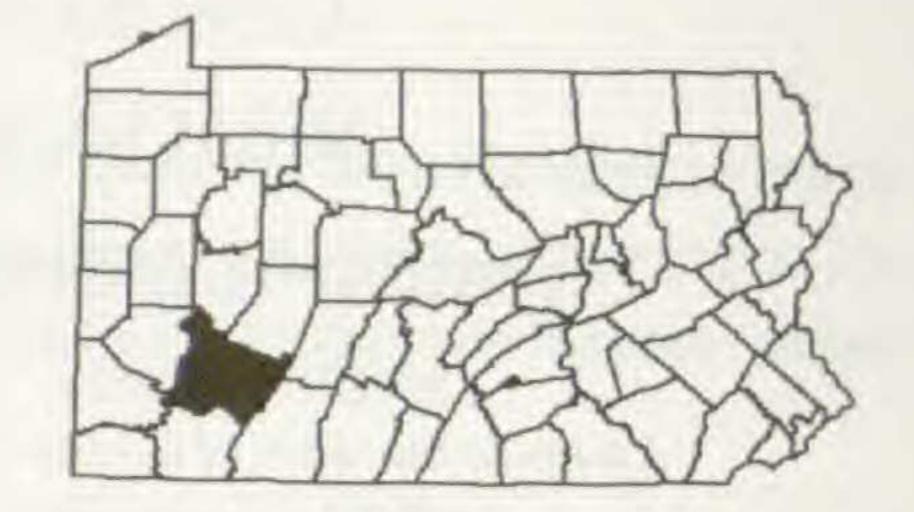
Westmoreland County, Pennsylvania, is located in the western-central part of the state (Fig. 1). It is bordered by Butler County to the northwest, Armstrong and Indiana counties to the north, and Cambria County to the northeast, Somerset County to the southeast, Fayette County to the south, and Washington County to the southwest and Allegheny County to the west. The county contains approximately 2683 sq km (1036 sq mi). Elevations in the county range from a maximum of 908 m (2980 ft) along the Laurel Ridge to a low of 222 m (727 ft) along the Monongahela River. Latitude ranges from 40.04035 to 40.68044°N and longitude ranges from 78.98418 to 79.90527°W. Westmoreland County receives a total annual precipitation of approximately 119 cm (47 in). Average seasonal snowfall is 112 cm (44 in) annually. The average date of the last frost in the spring is usually around May 12th and the first frost of the season approximately September 12th. The length of the growing season, from the last killing frost in spring to the first killing frost in autumn, is between 113-203 (mean 160) days (USDA 1968).

J. Bot. Res. Inst. Texas 6(2): 681 - 705. 2012

Journal of the Botanical Research Institute of Texas 6(2)

Westmoreland County Pennsylvania





Level III North American Terrestrial Ecoregion

Central Appalachians

Beaver-Conemaugh Run 1 River, Western Allegheny Plateau Turtle Creek 0 Loyalhanna GCreek-24 Sewickley 4



Fig. 1. Small map displays counties in Pennsylvania. Larger map displays major rivers, streams and terrestrial ecoregions in Westmoreland County.

Westmoreland County is comprised of two Level III Terrestrial Ecoregions, categorized according to location, climate, vegetation, hydrology, terrain, wildlife and land use/human activities. This concept of ecological classification, defined and described by the Commission for Environmental Cooperation (2011), is an attempt to classify and map ecological regions across the North American continent at multiple scales. The western two-thirds of Westmoreland County is part of the Western Allegheny Plateau Level III Terrestrial Ecoregion, which covers southwest Pennsylvania, southeast Ohio, western West Virginia, and northeastern Kentucky. The climate of the mid-latitude ecoregion is humid continental, characterized by warm to hot summers and cold winters. The natural vegetation was mostly mixed mesophytic forest of chestnut oak, red maple, white oak, black oak, beech, yellow-poplar, sugar maple, ash, basswood, buckeye, and hemlock. The region contains many perennial moderate- and high-gradient streams; natural lakes are lacking, but some teservoirs have been built.

The area of this ecoregion was unglaciated in the last Ice Age. It now has the form of a dissected plateau and some rugged hills underlain by horizontally bedded, often carboniferous, sedimentary rock.

The Western Allegheny Plateau ecoregion is mostly forested. The region's land uses include some logging, areas of livestock and dairy farming, and some cropland with hay, corn, and small grains. There are public forest lands throughout. Surface and underground coal mining is extensive, and has caused the sedimentation and acidification of many surface waters.

The eastern third of Westmoreland County delineated as Chestnut Ridge and the west-facing slopes of Laurel Ridge, has been classified as the Central Appalachians Level III Terrestrial Ecoregion. This terrestrial ecoregion extends from central Pennsylvania through Maryland, West Virginia, Virginia, Kentucky, and into northern Tennessee. It is higher, cooler, steeper, more rugged, and more densely forested than the Western Allegheny Plateau to the west. This ecoregion also has a humid continental climate of warm to hot summers and cold winters.

The forest type in this region is a mostly mixed mesophytic forest. This forest was at one time dominated by the American chestnut but is now composed of chestnut oak, red maple, white oak, black oak, beech, yellow-poplar, sugar maple, ash, basswood, buckeye, and hemlock. The many perennial, moderate- to high-gradient streams have bedrock and boulder substrates. Some waterfalls will be found. This ecoregion also lacks lakes, and a few reservoirs occur. The terrain is rugged, and is characterized by high hills and low mountains, steep, narrow ridges, narrow winding valleys, and deep coves. It was also unglaciated in the last Ice Age, and is now a highly dissected, rugged plateau composed of sandstone, shale, conglomerate, and coal from the Pennsylvanian period. Maximum elevations and local relief are higher than in the Western Allegheny Plateau. Mostly forestland uses prevail, along with some small areas of pasture, livestock, or dairy operations. Surface and underground bituminous coal mines are common and have reshaped ridges and hollows, and have caused siltation and acidification of many streams (Commission for Environmental Cooperation 2011). The soils of Westmoreland County consist of seven main series: Westmoreland-Guernsey-Clarksburg association, Gilpin-Wharton-Cavode association, Gilpin-Dekalb-Cavode association, Calvin association, Weikert association, Philo-Monongahela-Atkins association, and Upshur-Gilpin-Clarksburg association

(USDA 1968).

Rounded hills that have long, smooth, convex slopes, and gently sloping to nearly level benches and fans characterize the Westmoreland-Guernsey-Clarksburg association. These soils are over interbedded sandstone, shale and limestone. This association occurs mainly in the west-central part of the county and makes up about 9 percent of the county. These soils range from moderately deep to deep, and are somewhat poorly to well-drained. This association is well suited to farming although the seasonal high water table of some soils and the moderate depth to the bedrock in other areas create limitations. In areas where coal or natural gas has been removed, the level of the water table may have changed.

Gilpin-Wharton-Cavode association is characterized by broad, sloping hilltops and narrow valleys carved out by streams that form a branching pattern. This area is mainly in the northern and central parts of the county and covers about 19 percent of the county. The soil ranges from shallow to moderately deep and are poorly to well-drained. The gentle and moderate slopes of this association are used for agriculture however strip mining and natural gas removal is common in this association.

The Gilpin-Dekalb-Cavode association occurs mainly on Chestnut Ridge and Laurel Hill in the eastern part of the county. The soils range from moderately deep to deep and are somewhat poorly to well-drained. Soils that occur on ridges are underlain by acid, gray shale and sandstone. This association occupies about 14 percent of the county and consists of woodland that is used by private and State agencies for wildlife propagation or timber production. On the uppermost parts of the Chestnut Ridge and Laurel Hill occurs the Calvin association. This association is in the eastern part of the county. It consists of moderately deep soils that are well-drained. This association occupies about 2 percent of the county. Most of this association is woodland or farmed. The Weikert association occurs as escarpments cut by Loyalhanna Creek and the Kiskiminetas, Conemaugh, Allegheny, Youghiogheny, and Monongahela rivers. The largest areas occur where the streams have cut across the Chestnut Ridge and Laurel Hill. This association consists of shallow, well-drained rocky soils on

escarpments along streams. Rock types include sandstone, shale, siltstone, and limestone. It occupies about two percent of the county. This association is wooded in areas where the soil is deep enough to support trees. The Philo-Monongahela-Atkins association occurs along the larger streams of the county. Most of the association soils are deep and are moderately to poorly drained. Frequent flooding and a seasonal high water table are limitations that affect development. This association covers about 15 percent of the county. Most of the association is woodland and the rest is used for pasture or cropland.

The Upshur-Gilpin-Clarksburg association occurs in the northwestern part of the county. Most of the association soils are moderately deep to deep and are moderately to well-drained. These solids are over red and brown clay shale, siltstone and sandstone. This association covers about 5 percent of the county. Much of the association is occupied by woodland and the rest is used for pasture or cropland.

Major rivers and creeks that surround Westmoreland County are Kiskiminetas and Conemaugh rivers to the north, the Allegheny, Youghiogheny and Monongahela rivers to the west and Jacobs Creek to the south. Westmoreland County contains eight major watersheds. These major watersheds are grouped into two subbasin categories: the Lower Allegheny Subbasin, and the Monongahela Subbasin.

The Lower Allegheny Subbasin has a total drainage area of 7,599 sq km (2,394 sq mi). It includes the lowermost portion of the Allegheny River from Clinton to Pittsburgh, including the entire Kiskiminetas-Conemaugh River system. The subbasin encompasses much of Allegheny, Indiana, Cambria, Somerset and Westmoreland counties with portions of Butler and Armstrong counties. The Lower Allegheny Subbasin contains the Conemaugh River-Blacklick Creek Watershed, the Kiskiminetas River Watershed, the Lower Allegheny River Watershed, and the Loyalhanna Creek Watershed.

The Kiskiminetas River Watershed has a total drainage area of 425 sq km (164 sq mi) and its major waterways include Kiskiminetas River and Beaver Run.

The Conemaugh River-Blacklick Creek Watershed has a total drainage area of 1,813 sq km (700 sq mi) and its major waterways include Blacklick Creek, Two Lick Creek and the middle portion of the Conemaugh

River.

The Lower Allegheny River watershed drains a total area of 839 sq km (324 sq mi). Its major waterways include the lowest portion of the Allegheny River and Deer Creek. This watershed drains the northwestern portion of Westmoreland County.

The Loyalhanna Creek Watershed has a total drainage area of 958 sq km (370 sq mi). Its major waterways include Loyalhanna Creek, Blacklegs Creek and the lower portion of the Conemaugh River.

The Monongahela Subbasin has a total drainage area of 7,089 sq km (2,737 sq mi). It includes the Pennsylvania portion of the Monongahela River, from West Virginia and Maryland to Pittsburgh. This subbasin encompasses almost all of Fayette County, much of Greene, Washington, Westmoreland and Somerset counties and a small portion Allegheny County. The Monongahela Subbasin contains the Middle Monongahela River Watershed, Turtle Creek Watershed, and the Upper and Lower Youghiogheny River Watersheds.

The Middle Monongahela River watershed has a total drainage area of 1,318 sq km (509 sq mi) and its major streams include the middle portion of the Monongahela River, Pigeon Creek and Redstone Creek. Turtle Creek watershed has a total drainage area of 523 sq km (202 sq mi) and its major stream is Turtle

Creek.

The Upper Youghiogheny River has a total drainage area of 995 sq km (384 sq mi) and its major streams include the Indian Creek, Laurel Hill Creek and the upper portion of the Youghiogheny River. The Lower Youghiogheny River watershed has a total drainage area of 1,238 sq km (478 sq mi) and its major streams include Sewickley Creek, Jacobs Creek and the lower portion of the Youghiogheny River. Watershed conditions need to be evaluated to detect if biodiversity is increasing or decreasing. These comparisons will be extremely important in mining areas because they will reflect the interactions of many of the other indicators, and these comparisons are measurable effects for management decisions (Pennsylvania DEP Watershed Notebook 2006).

History

The first Native American tribes to live in Western Pennsylvania were known as the Alligewe. They were conquered by the Lenni-Lenape, better known as the Delawares. It was mostly the Delawares who lived, hunted and had the most contacts with the white settlers in this area.

Access into western Pennsylvania in 1755 was either up the Juniata River and then by water down to the Kiskiminetas River to the Allegheny River or by Braddock's Road. In 1758 a new road was built and it was known as Forbes Road. This road cut from Bedford through what is now Somerset, Westmoreland and Allegheny counties. Previous to the building of this road Westmoreland was traveled by Native Americans and the occasional white trader or frontiersman.

The first settlers were mostly young men who came from the eastern counties of Lancaster, York and Northampton or were from Virginia or Cumberland Valley and were mainly of German or Scotch-Irish decent. In August of 1763, the Battle of Bushy Run was fought near present day Jeannette, Pennsylvania, relieving Fort Pitt and setting in play the historical forces that would shape Westmoreland County. An Act of Assembly approved by Governor Richard Penn, on February 26, 1773, formed Westmoreland County.

One of the first early industries was run by Philip Freeman, who owned a tract of 1600 acres, and operated a gristmill in 1785 and later a saw mill and iron furnace. During this period farmers who raised more grain than they needed manufactured whiskey. By making whiskey from their grain they reduced a large quantity of grain into a smaller bulk while it still retained its value. From 1818 to 1840 roads and turnpikes were a thriving business. The arrival of these new roads also brought new industry such as the Rumbaugh brickyard. Rumbaugh brickyard was owned and operated by John Rumbaugh and a person traveling from Mammoth to Calumet could see large evacuation sites on the northern side of the road. This brickyard was active from around the last of the 19th and the first of the 20th centuries.

The demand for lumber by the growth of towns and railroads and the abundance of trees in Westmoreland County brought about the lumber industry. Byers and Allen of Pittsburgh built a large sawmill in Ligonier in 1902, and it was considered at that time the largest mill in the world. The lumber industry reached its peak of production in the early years of 1900, after which it became exhausted. During the years between the 1870s and the late 1920s, there was a great period of activity and prosperity in the southern part of Westmoreland Country and in Fayette County. It hummed with the mining of coal and the manufacture of coke. The Latrobe Steel Company is another large industry founded in 1913. Latrobe Steel Company was the first company on the North American continent to use electric furnaces exclusively for the melting and manufacture of manganese steel casting.

The first locomotive to enter Westmoreland County arrived in 1852 upon which trains began to run regularly. In the latter part of the nineteenth and first part of the twentieth century streetcars were a common means of transportation. The peak of this system was from about 1908 through World War I. During the 1930s when public works were needed, the Pennsylvania Turnpike was proposed. By 1940 it was finished and opened for travel from Cumberland County in central Pennsylvania to Westmoreland County.

Today Westmoreland County has world-class manufacturers of specialty steel, turbomachinery, tools and machinery. Over 7,500 small businesses provide a tremendous range of products and services. In the midst of growth and developing industry, the county retains a strong tradition of farming, recreational and conservation areas. Rich in recreational and conservation areas, Westmoreland County, has a dozens of county and state parks, country clubs, state game lands, state forests, and nature preserves. The county is the eighth largest county in Pennsylvania encompassing some 2,655 sq km (1,025 sq mi) and has a population of 368,983. It is comprised of 21 townships, 37 boroughs and seven cities; within these incorporated municipalities are numerous unincorporated towns and villages.

Major Collectors

Collecting in Westmoreland County for the Carnegie Museum Herbarium began in the early 1800s, and has continued to the present. Most of the collectors have been members of the Botanical Society of Western Pennsylvania and the staff of the Section of Botany at Carnegie Museum. Botanists who have made significant contributions to the knowledge of the Westmoreland County are Frederick H. Utech, Otto E. Jennings, Loree Speedy, Leroy K. Henry and CharlesW. DeMoise.

METHODS

This checklist was compiled by searching the herbaria of the Carnegie Museum of Natural History (CM). Herbarium collection information was obtained from the Morris Arboretum (MOAR) for ten samples. Other herbaria that were examined for specimens include the Philadelphia Herbarium (PH) at the Academy of Natural Sciences. Most of the collections were made during the 1910s and the 1990s, and underrepresented areas of the county were targeted during the last three years. Several specimens date back as far as 1862 and 1869. The majority of the specimens are deposited at the Carnegie Museum of Natural History (CM). Three floristic Westmoreland publications were examined for specimens, Demoise and Duman (1951), Pearth (1975), and Utech (1999). Rhoads and Block (2000) was the primary source for plant identification. For generic and species names we have followed the Synthesis of North American Flora (Kartesz 1999). Authorities are abbreviated for the majority of taxa according to Brummitt and Powell (1992).

RESULTS AND DISCUSSION

This list includes the names of all native and naturalized species known to occur in Westmoreland County. It includes a total of 142 families, 599 genera, 1418 species, and 1452 total taxa. The five families with the largest number of species are Asteraceae, Cyperaceae, Fabaceae, Poaceae, and Rosaceae. *Carex, Quercus, Rubus, Symphyotrichum* and *Viola* are the largest genera. This checklist recognizes 1347 species of Angiosperms, 17 species of Gymnosperms, and 54 species of Pteridophytes. There are 346 non-native species that have been introduced mainly from Europe and Eurasia. Seventy-six species have global or state ranking.

Of the 76 plants that have global or state ranking, three have a global ranking of G3 or vulnerable status. The remaining plants are either a G4 or G5 status, indicating an apparently secure or secure condition globally. *Delphinium exaltatum* has a global ranking of G3 or vulnerable status. *Delphinium exaltatum* contains alternate leaves palmately divided into 3 to 5 parted segments, 15 cm long, silvery-green abaxially and pubescent above and below. The basal lobes of some of the larger leaves are divided again and make the blade appear 5-lobed. The flowers are in terminal racemes. The 4 purplish-blue petals are dimorphic with the upper two petals expanded at the base and forming a spur. The lateral petals are reflexed in the apical half with long white hairs. The stamens are approximately 30 in number with yellow pollen. The 5 sepals are irregular. The species can be confused with *Delphinium tricorne*; however *D. tricorne* is a smaller plant and flowers much earlier than *D. exaltatum*, May to early June. By July, when *D. exaltatum* is beginning to flower, *D. tricorne* already has set fruit. Most of the collections are from rich shaded woods and on rocky limestone bluffs. This species is quite conspicuous and may be subject to casual picking or may be dug for gardens.

Poa paludigena also has a global ranking of G3 or vulnerable status. Little known about Poa paludigena range. It may easily be overlooked or misidentified due to its close resemblance to related species. It is a wetland species found in bogs, swamps, wet woods, wet meadows, and along streams. It has no rhizomes, only fibrous roots, and the weak and slender stem often falls over. It normally grows to a height of 2–6 dm tall. The leaves are narrow 1–2 mm wide and 10 cm long. The inflorescence has only 2 panicle branches per node, the spikelets borne at the middle to end of the branches. The distinguishing characteristics are within the flowers, spikelets with cobweb-like hairs at their bases situated above the middle of the paired branches, when it blooms in late May and into June. Identification often requires microscopic evaluation to distinguish it from its close relatives. With a status of G3 or vulnerable status, is *Scutellaria saxatilis* (Rock Skullcap). These plants are slender and decumbent with glabrous or eglandular stems. The leaves are glabrous, petioled, ovate-shaped and rounded at the base. The margins have fewer than 10 rounded teeth on each side. This species has a distinctive prominent protuberance on the upper corolla. The flowers are in terminal few-flowered racemes and have bracts underneath the calyx. This species can be confused with *Scutellaria ovata*, but this species has much longer leaves and is not decumbent.

There are 9 taxa in the Westmoreland County flora that are listed by the Pennsylvania Department of Agriculture (2007) as noxious weeds. It is therefore illegal to propagate, sell or transport the following taxa in the commonwealth: *Carduus nutans* (Musk thistle), *Cirsium arvense* (Canada thistle), *Cirsium vulgare* (Bull thistle), *Datura stramonium* (Jimson weed), *Lythrum salicaria* (Purple loosestrife), *Polygonum perfoliation* (Mile-a-minute), *Pueraria lobata* (kudzuvine), *Rosa multiflora* (Multiflora rose) and *Sorghum halepense* (Johnson grass).

Other species considered serious invasives in Pennsylvania's native ecosystems are: Acer platanoides (Norway maple), Aegopodium podagraria (goutweed), Ailanthus altissima (tree-of-heaven), Alliaria petiolata (garlic mustard), Berberis thunbergii (Japanese barberry), Bromus tectorum (Cheatgrass), Celastrus orbiculatus (Oriental bittersweet), Elaeagnus umbellata (autumn olive), Euonymus alatus (Winged Euonoymus), Fallopia japonica (Japanese knotweed), Hesperis matronalis (Dame's rocket), Ligustrum vulgare (Common privet), Lonicera japonica (Japanese honeysuckle), Lonicera maackii (Amur honeysuckle), Lonicera morrowii (Morrow's honeysuckle), Lonicera tatarica (tartarian honeysuckle), Microstegium vimineum (Japanese stilt grass), Myrio-phyllum spicatum (Eurasian water-milfoil), Ornithogallum umbellatum (Star-of Bethlehem), Pastinaca sativa (wild parsnip), Phalaris arundinacea (reed canary grass), Phragmites australis (Common reed), Rhamnus catharticus (common buckthorn), Rubus phoenicolasium (Wineberry), Spiraea japonica (Japanese spiraea), and Viburnum opulus var. opulus (Guelder rose) (DCNR 2004). While this checklist is probably not all-inclusive of every species in Westmoreland County, it is the most comprehensive list presently available.

ANNOTATED CHECKLIST OF THE SPECIES OF WESTMORELAND COUNTY, PENNSYLVANIA

Taxa are listed according to the following format: taxon name, author(s), {(year) collector and number) global: state ranking [Synonyms] and non-native source. We follow the state (S) and global (G) ranking systems developed by The Nature Conservancy (1996 version). The global numbers are designated from 1 (critically imperiled) to 5 (secure). Other notations include SH, which denotes historical occurrence. Synonyms are included for names not in common usage in the state or regional manuals. Nonnative status and country of origin is from Rhoads and Block (2007). In cases where there was more than one specimen present in the collection, recent collections of current collectors for the western Pennsylvania region were cited. Families, genera, and specific and infraspecific taxa are arranged alphabetically within vascular plant groups Angiosperms, Gymnosperms and Pteridophytes.

ANGIOSPERMS

Acanthaceae

Justicia americana (L.) Vahl, 2010 Speedy, L. 10-669

Aceraceae

Acer negundo L. var. negundo, 2008 Speedy, L. 08-0244
Acer nigrum Michx. f., 1983 Utech, F.H. and Ohara, M. 83-510 [Acer saccharum Marsh. var. nigrum (Michx. f.) Britton]
Acer pensylvanicum L., 2008 Speedy, M.L. 08-322
Acer platanoides L., 2008 Speedy, L. 08-0228 Europe
Acer rubrum L: var. rubrum, 2008 Speedy, L. 08-0095
Acer saccharinum L., 2008 Speedy, L. 08-0243
Acer saccharinum Marsh. var. saccharum, 2008 Speedy, L. 08-0242
Acer saccharum Marsh. var. saccharum, 2008 Speedy, L. 08-0243
Acer spicatum Lam., 1996 Utech, F.H. 96-411 Sagittaria australis (J.G. Sm.) Small, 1881 Block, P.D. s.n. [Sagittaria engelmanniana J.G. Sm. ssp. longirostra auct. non Micheli] Sagittaria latifolia Willd., 2010 Speedy, L. and Speedy, J. 10-579 [Sagittaria latifolia Willd. var. pubescens (Muhl. ex Nutt.) J.G. Sm.]

Amaranthaceae

Amaranthus albus L., 1992 Utech, F.H. 92-2689 Amaranthus blitum L. var. emarginatus (Moq. ex Uline & Bray) comb. nov. ined., 1990 Utech, F.H. 90-1282 [Amaranthus lividus auct. non L.]

Amaranthus hybridus L., 1994 Utech, F.H. 94-2211 Tropical America Amaranthus palmeri S. Wats., 1988 Utech, F.H. 88-1128 Amaranthus powellii S. Wats. ssp. powellii, 1992 Utech, F.H. 92-2937 Amaranthus retroflexus L., 1994 Utech, F.H. 94-2000 Tropical America Atriplex prostrata Boucher ex DC., 1960 Shaw, Mrs. Charles E. s.n. Eurasia

Acoraceae

Acorus calamus L., 1985 Thompson, S.A., Nishida, J.H. and MacDonald, M. 2478 Europe

Agavaceae

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Yucca filamentosa L., 1995 Utech, F.H. 95-158
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Alismataceae

Alisma subcordatum Raf., 1977 Polechko, M. s.n. [Alisma plantagoaquatica L. var. parviflorum (Pursh) Torr.]

Anacardiaceae

Rhus copallinum L., 1994 Paxton, W. s.n. [Rhus copallinum L. var. Iatifolia Engl.] Rhus glabra L., 1994 Utech, F.H. 94-1344 Rhus typhina L., 1997 Utech, F.H. 97-457 Toxicodendron radicans (L.) Kuntze ssp. negundo (Greene) Gillis, 2008 Speedy, M.L. 08-483

Annonaceae

Asimina triloba (L.) Dunal, 2008 Speedy, M.L. 08-750-2

Apiaceae

Aegopodium podagraria L., 1994 Utech, F.H. 94-876 Eurasia Anethum graveolens L., 1988 Utech, F.H. 88-1101 Europe Angelica atropurpurea L., 1997 Utech, F.H. 97-260 Angelica triquinata Michx., 1991 Utech, F.H. 91-1432 Angelica venenosa (Greenway) Fern., 1927 Grimm, W.C. 254 Anthriscus cerefolium (L.) Hoffmann, 1994 Utech, F.H. 94-394 Europe Chaerophyllum procumbens (L.) Crantz var. procumbens, 2008 Speedy, L. 08-0237

Cicuta maculata L. var. maculata, 1998 Utech, F.H. 98-91 Conium maculatum L., 1998 Utech, F.H. 98-119 Europe

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Panax quinquefolius L., 2010 Speedy, L., Metzgar, T. and Davis, J. 10-596 Panax trifolius L., 1994 Utech, F.H. and Kawano, S. 94-306

Aristolochiaceae

Asarum canadense L., 1997 Utech, F.H. 97-208 Endodeca serpentaria (L.) Raf., 2005 Isaac, B.L., Isaac, J.A. and Paxton, W. 18638 [Aristolochia serpentaria L.] Isotrema macrophyllum (Lam.) C.F. Reed, 2008 Speedy, L. 08-0307 [Aristolochia macrophylla Lam.]

Asclepiadaceae

Asclepias exaltata L., 1997 Utech, F.H. 97-489 Asclepias incarnata L. ssp. incarnata, 1998 Utech, F.H. 98-304 Asclepias quadrifolia Jacq., 1994 Utech, F.H. 94-843 Asclepias syriaca L., 1998 Utech, F.H. 98-68 Asclepias tuberosa L. ssp. tuberosa, 1998 Utech, F.H. 98-132 Asclepias viridiflora Raf., 1946 Henry, L.K. s.n.

Cryptotaenia canadensis (L.) DC., 1998 Utech, F.H. 98-65 Daucus carota L., 1998 Utech, F.H. 98-202 Eurasia Erigenia bulbosa (Michx.) Nutt., 2008 Speedy, M.L. 08-0015 G5:S4 Heracleum maximum Bartr., 2008 Speedy, M.L. 08-734 [Heracleum lanatum Michx.]

Hydrocotyle americana L., 2010 Speedy, L. 10-442 Osmorhiza claytonii (Michx.) C.B. Clarke, 1997 Utech, F.H. 97-200 Osmorhiza longistylis (Torr.) DC., 2008 Speedy, L. 08-0232 Oxypolis rigidior (L.) Raf., 2010 Speedy, L., Metzgar, T. and Davis, J. 10-615 G5:S2

Pastinaca sativa L., 1997 Utech, F.H. 97-322 Eurasia Peucedanum ostruthium (L.) W.D.J. Koch, 1938 Jennings, O.E. s.n. Europe

Sanicula canadensis L. var. grandis Fern., 1994 Utech, F.H. 94-1309 Sanicula marilandica L., 2008 Speedy, L. 08-0234 Sanicula odorata (Raf.) K.M. Pryer & L.R. Phillippe, 1998 Utech, F.H. 98-79 [Sanicula gregaria Bickn.] Sanicula trifoliata Bickn., 2008 Speedy, M.L. 08-538 Taenidia integerrima (L.) Drude, 2009 Speedy, L. 09-0479 Thaspium barbinode (Michx.) Nutt., 2009 Speedy, L. and Stout, L. 09-0139

Asteraceae

Achillea millefolium L., 1998 Utech, F.H. 98-200 Ageratina altissima (L.) King & H.E. Robins. var. altissima, 1997 Utech, F.H. 97-991 [Eupatorium rugosum Houtt.] Ambrosia artemisiifolia L., 1997 Utech, F.H. 97-961 Ambrosia trifida L., 1996 Utech, F.H. 96-371 Anaphalis margaritacea (L.) Benth. & Hook. f., 1983 Utech, F.H. 83-535 Antennaria howellii Greene ssp. neodioica (Greene) Bayer, 2010 Speedy, L. and Metzgar, T. 10-083 [Antennaria neodioica Greene] Antennaria neglecta Greene, 2010 Speedy, L. and Metzgar, T. 10-187 Antennaria parlinii Fern. ssp. parlinii, 2010 Metzgar, T. 4-MET Antennaria plantaginifolia (L.) Richards., 1902 Shafer, J. A. s.n. Antennaria virginica Stebbins, 1973 Duman, M.G. 73-6 G4:S3 Anthemis arvensis L., 1994 Utech, F.H. 94-905 Europe Anthemis cotula L., 1998 Utech, F.H. 98-234 Europe Arctium lappa L., 1998 Utech, F.H. 98-268 Eurasia Arctium minus (Hill) Bernh., 1996 Utech, F.H. 96-368 Eurasia Arnoglossum atriplicifolium (L.) H.E. Robins., 1995 Utech, F.H. 95-720 [Cacalia atriplicifolia L.] Artemisia vulgaris L., 1997 Utech, F.H. 97-925 Eurasia Bellis perennis L., 1994 Utech, F.H. 94-877 Europe Bidens aristosa (Michx) Britt., 2009 Speedy, M.L. 09-1063 [Bidens polylepsis Blake] Bidens bipinnata L., 1919 Rowe, A.L. s.n. Bidens cernua L., 1992 Utech, F.H. and Utech, R.J. 92-3135 Bidens frondosa L., 1997 Utech, F.H. 97-994 Bidens trichosperma (Michx.) Britt., 1993 Utech, F.H. 93-3111 [Bidens coronata (L.) Britt.] Bidens tripartita L., 1993 Utech, F.H. 93-3112 [Bidens connata Muhl. ex Willd.] Bidens vulgata Greene, 1991 Utech, F.H. 91-1905 Brickellia eupatorioides (L.) Shinners var. eupatorioides, 1947 Mason, E. s.n. [Kuhnia eupatorioides L.] Carduus nutans L., 1998 Utech, F.H. 98-17 Europe Centaurea cyanus L., 1995 Utech, F.H. 95-162 Europe Centaurea jacea L., 1997 Utech, F.H. 97-1015 Europe Centaurea nigra L., 1993 Utech, F.H. 93-2754 Europe Centaurea nigrescens Willd., 2009 Speedy, M.L., Van de Venne, P. and Van de Venne, T. 09-987 Europe Centaurea stoebe L. ssp. micranthos (Gmel. ex Gugler) Hayek, 1998 Utech, F.H. 98-274 Europe [Centaurea maculosa auct. non Lam.] Cichorium intybus L., 1997 Utech, F.H. 97-451 Europe Cirsium altissimum (L.) Spreng., 2010 Speedy, L., Davis, J., Byers, D. and Davis, G. 10-651 Cirsium arvense (L.) Scop., 1997 Utech, F.H. 97-323 Eurasia Cirsium discolor (Muhl. ex Willd.) Spreng., 1936 Demoise, C.W. s.n.

Thaspium trifoliatum (L.) A. Gray var. aureum Britt., 2010 Speedy, L. 10-296 [Thaspium trifoliatum (L.) A. Gray var. flavum Blake] Thaspium trifoliatum (L.) A. Gray var. trifoliatum, 1997 Utech, F.H. 97-348

Zizia aptera (A. Gray) Fern., 1916 Jennings, O.E. s.n. Zizia aurea (L.) W.D.J. Koch, 1994 Utech, F.H. 94-559

Apocynaceae

Apocynum androsaemifolium L., 1994 Utech, F.H. 94-1251 Apocynum cannabinum L., 1998 Utech, F.H. 98-67 Apocynum x floribundum Greene (pro sp.), 1993 Utech, F.H. 93-1701 [Apocynum medium Greene] Asclepias purpurascens L., 1936 Duman, OSB, Rev. Maximilian s.n. Vinca minor L., 1995 Utech, F.H. 95-94 Europe

Aquifoliaceae

Ilex montana Torr. & A. Gray ex A. Gray, 2010 Speedy, L. 10-246 Ilex opaca Ait., 2009 Speedy, M.L. and Metzgar, T. 09-977 Ilex verticillata (L.) A. Gray, 1997 Utech, F.H. 97-976

Araceae

Arisaema triphyllum (L.) Schott, 2002 Isaac, B.L. and Isaac, J.A. 14427
 [Arisaema triphyllum ssp. pusillum (Peck) Huttleston; Arisaema triphyllum ssp. stewardsonii (Britt.) Huttleston]
 Orontium aquaticum L., 1919 Jennings, O.E. s.n. G5:S4
 Symplocarpus foetidus (L.) Salisb. ex Nutt., 1995 Utech, F.H. 95-112

Araliaceae

Aralia hispida Vent., 1983 Mulvihill, R.S. s.n. Aralia nudicaulis L., 1994 Utech, F.H. 94-546 Aralia racemosa L. ssp. racemosa, 1997 Utech, F.H. 97-924 Aralia spinosa L., 1996 Utech, F.H. 96-408

Cirsium muticum Michx., 2010 Speedy, L., Metzgar, T. and Davis, J. 10-601

Cirsium pumilum Spreng., 2009 Speedy, L. and Metzgar, T. 09-727 Cirsium vulgare (Savi) Ten., 1993 Utech, F.H. 93-3280 Eurasia Conoclinium coelestinum (L.) DC., 1988 Utech, F.H. 88-1097 **G5:S4** [Eupatorium coelestinum L.] Conyza canadensis (L.) Cronq., 1993 Utech, F.H. 93-3234 Coreopsis lanceolata L., 1995 Utech, F.H. 95-163 Coreopsis tripteris L., 1995 Utech, F.H. 95-701 Cosmos bipinnatus Cav., 1995 Utech, F.H. 95-690 Mexico Cota tinctoria (L.) J. Gay ex Guss., 1982 Utech, F.H. and Ohara, M. 82-307 Europe [Anthemis tinctoria L.] Crepis capillaris (L.) Wallr., 2010 Speedy, L. 10-426 Europe Cyclachaena xanthifolia (Nutt.) Fresen., 1923 Jennings, O.E. s.n. [/va xanthifolia Nutt.]

Helianthus strumosus L., 1995 Utech, F.H. 95-822 Helianthus tuberosus L., 1998 Utech, F.H. 98-213 Heliopsis helianthoides (L.) Sweet var. helianthoides, 1993 Utech, F.H. 93-3205 Hieracium aurantiacum L., 1997 Utech, F.H. 97-384 Europe Hieracium caespitosum Dumort., 1997 Utech, F.H. 97-382 Europe Hieracium gronovii L., 1970 Henry, L.K. s.n. Hieracium paniculatum L., 1997 Utech, F.H. 97-993 Hieracium scabrum Michx., 1988 Mulvihill, R.S. 123 Hieracium venosum L., 1994 Utech, F.H. 94-873 Hypochaeris radicata L., 1993 Utech, F.H. 93-1677 Eurasia Inula helenium L., 1947 Mason, E. s.n. Europe Krigia biflora (Walt.) Blake, 1991 Utech, F.H. 91-621 Lactuca biennis (Moench) Fern., 1997 Utech, F.H. 97-956 Lactuca canadensis L., 1993 Utech, F.H. 93-2266 Lactuca saligna L., 2009 Speedy, M.L. and Metzgar, T. 09-950 Europe Lactuca sativa L., 1937 Demoise, C.W. s.n. Europe Lactuca serriola L., 1992 Utech, F.H. and Utech, R.J. 92-3119 Europe Lapsana communis L., 1994 Utech, F.H. 94-355 Europe Leucanthemum vulgare Lam., 1997 Utech, F.H. 97-446 Europe [Chrysanthemum leucanthemum L.] Matricaria discoidea DC., 1994 Utech, F.H. 94-919 North America and Northeast Asia [Matricaria matricarioides auct. non (Less.) Porter] Oclemena acuminata (Michx.) Greene, 2010 Speedy, L., Bowers, M. and White, D. 10-679 [Aster acuminatus Michx.] Packera aurea (L.) A. & D. Löve, 2008 Speedy, M.L. 08-380 [Senecio aureus L.] Packera obovata (Muhl. ex Willd.) W.A. Weber & A. Löve, 2008 Speedy, L. 08-0241 [Senecio obovatus Muhl. ex Willd.] Picris hieracioides L. ssp. hieracioides, 1995 Utech, F.H. 95-699 Eurasia Prenanthes alba L., 1966 Leberman, R.C. s.n.

Doellingeria infirma (Michx.) Greene, 1923 Jennings, O.E. s.n. [Aster infirmus Michx.]

Doellingeria umbellata (P. Mill.) Nees var. umbellata, 1997 Utech, F.H. 97-1016 [Aster umbellatus P. Mill.]

Erechtites hieraciifolius (L.) Raf. ex DC. var. hieraciifolius, 1993 Utech,

F.H. 93-3228

Erigeron annuus (L.) Pers., 1997 Utech, F.H. 97-439 Erigeron philadelphicus L. var. philadelphicus, 1997 Utech, F.H. 97-379 Erigeron pulchellus Michx. var. pulchellus, 2010 Speedy, L. and

Metzgar, T. 10-181

Erigeron strigosus Muhl. ex Willd. var. strigosus, 1994 Utech, F.H. 94-706

Eupatorium altissimum L., 1995 Utech, F.H. 95-927 Eupatorium capillifolium (Lam.) Small, 2002 Isaac, B.L., Isaac, J.A., Morton, C.M. and Carter, P. 15793 Eupatorium perfoliatum L., 1998 Utech, F.H. 98-313 Eupatorium serotinum Michx., 1974 Sordahl, M. s.n.

Eupatorium sessilifolium L., 2009 Speedy, L. and Metzgar, T. 09-724 Eurybia divaricata (L.) Nesom, 1997 Utech, F.H. 97-992 [Aster divaricatus L.]

Eurybia macrophylla (L.) Cass., 1996 Utech, F.H. 96-383 [Aster macrophyllus L.]

Eurybia radula (Ait.) Nesom, 1948 Buker, W.E. s.n. G5:S2 [Aster radula Ait.]

Eurybia schreberi (Nees) Nees, 1992 Utech, F.H. 92-2048 [Aster schreberi Nees]

Euthamia graminifolia (L.) Nutt., 1997 Utech, F.H. 97-999 [Solidago graminifolia (L.) Salisb.]

Eutrochium fistulosum (Barratt) E. Lamont, 1998 Utech, F.H. 98-314 [Eupatorium fistulosum Barratt]

Eutrochium purpureum (L.) E. Lamont var. purpureum, 1995 Utech, F.H. 95-818 [Eupatorium purpureum L.]

Galinsoga quadriradiata Ruiz & Pavon, 1998 Utech, F.H. 98-182 Central and South America

Gamochaeta purpurea (L.) Cabrera, 1903 Shafer, J.A. and Medsger, O.P. s.n. [Gnaphalium purpureum L.]
Gnaphalium uliginosum L., 1907 Jennings, O.E. s.n. Europe Hasteola suaveolens (L.) Pojark., 1900 Shafer, J.A. s.n. [Cacalia suaveolens L.]
Helenium autumnale L., 1992 Utech, F.H. 92-3164
Helianthus annuus L., 1995 Utech, F.H. 95-719
Helianthus decapetalus L., 1992 Utech, F.H. 92-2316
Helianthus divaricatus L., 1998 Utech, F.H. 98-203
Helianthus giganteus L., 1992 Utech, F.H. 92-3044
Helianthus grosseserratus Martens, 1917 Jennings, O.E. s.n.
Helianthus microcephalus Torr. & A. Gray, 1928 Jennings, O.E. and Jennings, G.K. s.n. G5:S4
Helianthus mollis Lam., 1896 Shafer, J.A. s.n. Prenanthes altissima L., 1992 Utech, F.H. 92-3204 Prenanthes crepidinea Michx., 2003 Isaac, B.L. and Isaac, J.A. 16094 G4:S4

Prenanthes trifoliolata (Cass.) Fern., 2010 Speedy, L. 10-586 Pseudognaphalium macounii (Greene) Kartesz, 2009 Speedy, M.L., Davis, J. and Byers, D. 09-889

Pseudognaphalium obtusifolium (L.) Hilliard & Burtt ssp. obtusifolium, 1992 Utech, F.H. 92-3302 [Gnaphalium obtusifolium L.]
Rudbeckia hirta L. var. hirta, 1993 Utech, F.H. 93-2294 [Rudbeckia hirta L. var. pulcherrima Farw.]
Rudbeckia laciniata L. var. laciniata, 1998 Utech, F.H. 98-166
Rudbeckia triloba L. var. triloba, 1998 Utech, F.H. 98-306
Senecio vulgaris L., 1994 Utech, F.H. 94-396 Eurasia
Sericocarpus asteroides (L.) B.S.P., 1941 Jennings, O.E. s.n. [Aster

paternus Cronq.]

Silphium asteriscus L. var. trifoliatum (L.) J.A. Clevinger, 1995 Utech, F.H. 95-702 [Silphium trifoliatum L.]

Smallanthus uvedalius (L.) Mackenzie ex Small, 2004 Coxe, R. s.n. G4G5:S3 [Polymnia uvedalia (L.) L.] Solidago altissima L. ssp. altissima, 1980 Utech, F.H. 80-149 [Solidago canadensis L. var. scabra Torr. & A. Gray] Solidago arguta Ait. var. arguta, 1981 Utech, F.H. 81-413 Solidago bicolor L., 1997 Utech, F.H. 97-1009 Solidago caesia L. var. caesia, 1997 Utech, F.H. 97-996 Solidago canadensis L. var. canadensis, 1996 Utech, F.H. 96-382 Solidago canadensis L. var. hargeri Fern., 1943 Little, R.W. s.n. Solidago flexicaulis L., 1993 Utech, F.H. 93-3244 Solidago gigantea Ait., 2009 Speedy, L. 09-704 Solidago juncea Ait., 1995 Utech, F.H. 95-916 Solidago nemoralis Ait. var. nemoralis, 1991 Utech, F.H. 91-1663 Solidago patula Muhl. ex Willd. var. patula, 1995 Utech, F.H. 95-915 Solidago rugosa P. Mill. ssp. aspera var. aspera (Ait.) Crong., 2009 Speedy, M.L. and Metzgar, T. 09-946

Solidago rugosa P. Mill. ssp. rugosa var. rugosa, 1997 Utech, F.H. 97-998

Solidago squarrosa Muhl., 1924 Bright, J. s.n.

Solidago ulmifolia Muhl. ex Willd. var. ulmifolia, 1991 Utech, F.H. 91-1729

Sonchus arvensis L. ssp. uliginosus (Bieb.) Nyman, 1992 Utech, F.H. 92-3206 Europe

Sonchus asper (L.) Hill, 1993 Utech, F.H. 93-2319 Europe Sonchus oleraceus L., 1993 Utech, F.H. 93-3159 Europe Symphyotrichum cordifolium (L.) Nesom, 2009 Speedy, M.L. and Metzgar, T. 09-1101 [Aster cordifolius L.]

Symphyotrichum laeve (L.) A.& D. Love var. laeve, 1960 Shaw, Phyllis A. s.n. [Aster laevis L. var. laevis]

Symphyotrichum lanceolatum (Willd.) Nesom ssp. lanceolatum var. interior (Wieg.) Nesom, 1900 Shafer, J.A. s.n. [Aster lanceolatus Willd. ssp. interior (Wieg.) A.G. Jones]

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Balsaminaceae

Impatiens capensis Meerb., 1997 Utech, F.H. 97-422 Impatiens pallida Nutt., 1998 Utech, F.H. 98-81

Berberidaceae

Berberis thunbergii DC., 2002 Isaac, B.L. and Isaac, J.A. 14441 Japan Caulophyllum thalictroides (L.) Michx., 2008 Speedy, M.L. 08-540 Jeffersonia diphylla (L.) Pers., 2008 Speedy, M.L. 08-0027 Podophyllum peltatum L., 1997 Utech, F.H. 97-333

Betulaceae

Alnus incana (L.) Moench ssp. rugosa (Du Roi) Clausen, 2010 Speedy, L., Metzgar, T. and Davis, J. 10-612-1
Alnus serrulata (Ait.) Willd., 1995 Utech, F.H. 95-99
Betula alleghaniensis Britt., 2008 Speedy, M.L. 08-742
Betula lenta L., 2008 Speedy, M.L. 08-0006
Betula pendula Roth, 1994 Utech, F.H. 94-1355 Europe
Betula populifolia Marsh., 2009 Speedy, L. and Metzgar, T. 09-737
Carpinus caroliniana Walt. ssp. virginiana (Marsh.) Furlow, 1998
Utech, F.H. 98-89

Symphyotrichum lanceolatum (Willd.) Nesom ssp. lanceolatum var. lanceolatum, 1997 Utech, F.H. 97-1005 [Aster simplex Willd.] Symphyotrichum lateriflorum (L.) A. & D. Löve var. horizontale (Desf.) Nesom, 1936 Churchill, J.A. 163 [Aster lateriflorus (L.) Britt. var. pendulus (Ait.) Burgess]

Symphyotrichum lateriflorum (L.) A. & D. Löve var. lateriflorum, 1997 Utech, F.H. 97-951 [Aster lateriflorus (L.) Britt.]

Symphyotrichum novae-angliae (L.) Nesom, 1997 Utech, F.H. 97-948 [Aster novae-angliae L.]

Symphyotrichum phlogifolium (Muhl. ex Willd.) Nesom, 1924 Jennings, O.E. s.n. [Aster patens Ait. var. phlogifolius (Muhl. ex Willd.) Nees]

Symphyotrichum pilosum (Willd.) Nesom var. pilosum, 1993 Utech, F.H. 93-3303 [Aster pilosus Willd.]

Symphyotrichum pilosum (Willd.) Nesom var. pringlei (A. Gray) Nesom, 1937 Jennings, O.E. s.n. [Aster pilosus Willd. var. deCorylus americana Marsh., 1991 Utech, F.H. 91-1823 Corylus cornuta Marsh., 2010 Speedy, L. 10-495 Ostrya virginiana (P. Mill.) K. Koch, 2008 Speedy, L. 08-0156

Bignoniaceae

Campsis radicans (L.) Seem. ex Bureau, 1998 Utech, F.H. 98-161 Catalpa bignonioides Walt., 1994 Utech, F.H. 94-993 Catalpa speciosa Warder ex Engelm., 2004 Paxton, W. s.n.

Boraginaceae

Buglossoides arvensis (L.) I.M. Johnston, 2008 Speedy, L. 08-0098 Eurasia

Cynoglossum officinale L., 1901 Holmes, K.R. s.n. Eurasia Cynoglossum virginianum L. var. virginianum, 1993 Utech, F.H.

motus Blake]

Symphyotrichum praealtum (Poir.) Nesom var. praealtum, 2009 Speedy, M.L. 09-988 G5:S3 [Aster praealtus Poir.]

Symphyotrichum prenanthoides (Muhl. ex Willd.) Nesom, 1997 Utech,

F.H. 97-949 [Aster prenanthoides Muhl. ex Willd.]

Symphyotrichum puniceum (L.) A. & D. Löve var. puniceum, 1997 Utech, F.H. 97-954 [Aster puniceus L.]

Symphyotrichum shortii (Lindl.) Nesom, 1994 Utech, F.H. 94-2183 [Aster shortii Lindl.]

Symphyotrichum undulatum (L.) Nesom, 1981 Utech, F.H. 81-463 [Aster undulatus L.]

Symphyotrichum urophyllum (Lindl.) Nesom, 2009 Speedy, M.L. 09-1036 [Aster urophyllus Lindl.]

Tanacetum parthenium (L.) Schultz-Bip., 1937 Demoise, C.W. s.n.

Europe [Chrysanthemum parthenium (L.) Bernh.] Tanacetum vulgare L., 1968 Leberman, R.C. s.n. Europe Taraxacum laevigatum (Willd.) DC., 1904 Jennings, O.E. s.n. Eurasia

Taraxacum officinale G.H. Weber ex Wiggers, 1997 Utech, F.H. 97-221 Eurasia

93-1577

Echium vulgare L., 1998 Utech, F.H. 98-84 Europe Hackelia virginiana (L.) I.M. Johnston, 1998 Utech, F.H. 98-178 Lithospermum latifolium Michx., 2010 Speedy, L. 10-279 **G4:S4** Mertensia virginica (L.) Pers. ex Link, 1993 Utech, F.H. 93-489 Myosotis arvensis (L.) Hill, 1994 Utech, F.H. 94-711 Eurasia Myosotis laxa Lehm., 1993 Utech, F.H. 93-1989 Myosotis scorpioides L., 1993 Utech, F.H. 93-2197 Europe Symphytum officinale L., 1998 Utech, F.H. 98-113 Eurasia

Brassicaceae

Alliaria petiolata (Bieb.) Cavara & Grande, 1997 Utech, F.H. 97-033 Europe

Arabidopsis lyrata (L.) O'Kane & Al-Shehbaz ssp. lyrata, 2010 Speedy,

L. 10-142 [Arabis lyrata L.]

Arabidopsis thaliana (L.) Heynh., 1995 Utech, F.H. 95-141 Eurasia Arabis pycnocarpa M. Hopkins, 2010 Speedy, L. and Metzgar, T. 10-180 G5:S1 [Arabis hirsuta (L.) Scop. var. adpressipilis (M.

Hopkins) Rollins]

Armoracia rusticana P.G. Gaertn., B. Mey. & Scherb., 1936 Demoise, C.W. s.n. Eurasia
Barbarea vulgaris Ait. f., 1997 Utech, F.H. 97-380 Eurasia
Boechera canadensis Al-Shehbaz, 1998 Utech, F.H. 98-31 [Arabis canadensis L.]
Boechera laevigata (Muhl. ex Willd.) Al-Shehbaz, 1994 Utech, F.H. 94-211 [Arabis laevigata (Muhl. ex Willd.) Poir.]
Boechera shortii (Fern.) Al-Shehbaz, 1924 Bright, J. s.n. [Arabis shortii (Fern.) Gleason]
Brassica juncea (L.) Czern., 1998 Utech, F.H. 98-18 Eurasia
Brassica rapa L. var. rapa, 1994 Utech, F.H. 94-785 Europe
Camelina microcarpa Andrz. ex DC., 1994 Utech, F.H. 94-625 Eurasia
Capsella bursa-pastoris (L.) Medik., 1997 Utech, F.H. 97-266 Eurasia

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Tragopogon dubius Scop., 1994 Utech, F.H. 94-793 Europe Tragopogon porrifolius L., 1991 Utech, F.H. 91-686 Europe Tripleurospermum maritimum (L.) W.D.J. Koch ssp. inodora (L.) Appleq., 1960 Shaw, Mrs. Charles E. s.n. Europe [Tripleurospermum inodorum (L.) Schultz-Bip.] Tussilago farfara L., 1993 Utech, F.H. 93-865 Eurasia

Verbesina alternifolia (L.) Britt. ex Kearney, 1998 Utech, F.H. 98-318 Vernonia gigantea (Walt.) Trel. ex Branner & Coville, 1997 Utech, F.H. 97-1006

Vernonia noveboracensis (L.) Michx., 2010 Speedy, L., Metzgar, T. and Davis, J. 10-611

Xanthium strumarium L., 1992 Utech, F.H. 92-2763

Cardamine angustata O.E. Schulz, 2002 Isaac, B.L. and Isaac, J.A. 14454

Cardamine bulbosa (Schreb. ex Muhl.) B.S.P., 2008 Speedy, L. 08-0194 Cardamine concatenata (Michx.) Sw., 1993 Utech, F.H. 93-577 Cardamine diphylla (Michx.) Wood, 1994 Utech, F.H. 94-97 Cardamine douglassii Britt., 1993 Utech, F.H., Kawano, S., Ohara, S., Kudoh, H. and Shibaike, H. 93-343

Cardamine hirsuta L., 2008 Speedy, M.L. 08-0068 Europe Cardamine impatiens L., 1994 Utech, F.H. 94-915 Europe Cardamine parviflora L. var. arenicola (Britt.) O.E. Schulz, 1963 Henry, L.K. s.n.

Cardamine pensylvanica Muhl. ex Willd., 2008 Speedy, L. 08-0155 Cardamine rotundifolia Michx., 1984 Mulvihill, R.S. and Leberman,

R.C. s.n.

Lobelia siphilitica L., 1997 Utech, F.H. 97-927 Lobelia spicata Lam. var. spicata, 1916 Jennings, O.E. and Jennings, G.K. s.n.

Triodanis perfoliata (L.) Nieuwl., 1994 Utech, F.H. 94-951

Cannabaceae

Humulus japonicus Sieb. & Zucc., 1994 Utech, F.H. 94-1937 Asia Humulus lupulus L., 1995 Utech, F.H. 95-742 Europe

Capparaceae

Polanisia dodecandra (L.) DC. ssp. dodecandra, 1992 Utech, F.H. 92-2825

Caprifoliaceae

Diervilla Ionicera P. Mill., 1997 Utech, F.H. 97-324 Lonicera canadensis Bartr. ex Marsh., 1933 Agostini, C.T. s.n. Lonicera dioica L., 1914 Jennings, O.E. s.n. Lonicera japonica Thunb., 1998 Utech, F.H. 98-23 Asia Lonicera maackii (Rupr.) Herder, 2008 Speedy, M.L. 08-314 Asia Lonicera morrowii A. Gray, 2008 Speedy, L. 08-0152 Japan Lonicera tatarica L., 1997 Utech, F.H. 97-009 Eurasia Sambucus nigra L. ssp. canadensis (L.) R. Bolli, 2008 Speedy, M.L. 08-470 [Sambucus canadensis L.] Sambucus racemosa L. var. racemosa, 2008 Speedy, L. 08-0193 [Sambucus racemosa L. ssp. pubens (Michx.) House] Symphoricarpos albus (L.) Blake var. laevigatus (Fern.) Blake, 1936 Demoise, C.W. s.n. Symphoricarpos orbiculatus Moench, 1993 Utech, F.H. 93-3110 Triosteum aurantiacum Bickn. var. aurantiacum, 1994 Utech, F.H. 94-1292

Coincya monensis (L.) Greuter & Burdet ssp. recurvata (All.) Leadley, 1996 Cusick, A.W. and Shelton, C. 33099 Europe

Descurainia sophia (L.) Webb ex Prantl, 1994 Utech, F.H. 94-1052 Eurasia

Diplotaxis tenuifolia (L.) DC., 1994 Utech, F.H. 94-749 Europe Draba verna L., 1994 Utech, F.H., Ohara, M., Takasu, H. and Kudoh, H. 94-85 Europe

Erysimum cheiranthoides L., 1993 Utech, F.H. 93-2093 Eurasia Erysimum repandum L., 1994 Utech, F.H. 94-1021 Eurasia Hesperis matronalis L., 1997 Utech, F.H. 97-362 Europe Iodanthus pinnatifidus (Michx.) Steud., 2010 Speedy, L. and Bowers,

M. 10-229 G5:S1

Lepidium campestre (L.) Ait. f., 1997 Utech, F.H. 97-271 Eurasia Lepidium draba L., 2009 Speedy, L. 09-0176 Eurasia [Cardaria draba (L.) Desv.]

Lepidium virginicum L. var. virginicum, 1994 Utech, F.H. 94-578 Lunaria annua L., 2008 Speedy, M.L. 08-0065 Europe Nasturtium officinale Ait. f., 1994 Utech, F.H. 94-872 Europe Raphanus raphanistrum L., 1994 Utech, F.H. 94-1071 Mediterranean Raphanus sativus L., 1903 Shafer, J.A. and Medsger, O.P. s.n. Mediterranean

Triosteum aurantiacum Bickn. var. glaucescens Wieg., 1907 Jennings, O.E. s.n.

Triosteum aurantiacum Bickn. var. illinoense (Wieg.) Palmer & Steyermark, 1935 Demoise, C.W. s.n. Triosteum perfoliatum L., 1992 Utech, F.H. 92-2149 Viburnum acerifolium L., 2008 Speedy, M.L. 08-548 Viburnum dentatum L. var. lucidum Ait., 2008 Speedy, M.L. 08-743 [Viburnum recognitum Fern.] Viburnum dilatatum Thunb., 2008 Speedy, M.L. and Bowers, M. 08-1267 Asia Viburnum lantanoides Michx., 2009 Speedy, M.L., Davis, J. and Byers, D. 09-882 [Viburnum alnifolium Marsh.] Viburnum lentago L., 1997 Utech, F.H. 97-029 Viburnum nudum L. var. cassinoides (L.) Torr. & A. Gray, 1972 Leberman, R.C. s.n. [Viburnum cassinoides L.] Viburnum opulus L. var. opulus, 1994 Utech, F.H. 94-175 Eurasia Viburnum plicatum Thunb., 1994 Utech, F.H. and Kawano, S. 94-324 Asia Viburnum prunifolium L., 1996 Utech, F.H. 96-16

Rorippa palustris (L.) Bess. ssp. palustris, 2010 Speedy, L. 10-571 [Rorippa palustris (L.) Besser ssp. fernaldiana (Butters & Abbe) Jonsell]

Rorippa sylvestris (L.) Bess., 1936 Demoise, C.W. s.n. Europe Sinapis alba L., 1967 Duman, M.G. s.n. Mediterranean Sinapis arvensis L., 1997 Utech, F.H. 97-227 Mediterranean Sisymbrium altissimum L., 1994 Utech, F.H. 94-1184 Eurasia Sisymbrium officinale (L.) Scop., 1993 Utech, F.H. 93-1564 Europe Thlaspi arvense L., 1998 Utech, F.H. 98-27 Europe Turritis glabra L., 1920 Jennings, O.E. s.n. [Arabis glabra (L.) Bernh.]

Buddlejaceae

Buddleja davidii Franch., 1995 Utech, F.H. 95-914 China

Buxaceae

Pachysandra terminalis Sieb. & Zucc., 2010 Speedy, L. 10-671 Japan Callitrichaceae Callitriche heterophylla Pursh ssp. heterophylla, 1968 Leberman, R.C. s.n. Callitriche palustris L., 1977 Polechko, M. s.n. Callitriche terrestris Raf., 1939 Jennings, O.E. s.n. Calycanthaceae

Caryophyllaceae

Agrostemma githago L., 1979 Utech, F.H. 79-318 Europe Arenaria serpyllifolia L. var. serpyllifolia, 1994 Utech, F.H. 94-842

Calycanthus floridus L., 1882 White, D.J., 1007-10

Campanulaceae

Campanula rapunculoides L., 1936 Demoise, C.W. s.n. Eurasia Campanulastrum americanum (L.) Small, 1998 Utech, F.H. 98-262 [Campanula americana L.] Lobelia cardinalis L., 1995 Mulvihill, R.S. and Leberman, R.C. s.n. Lobelia inflata L., 1996 Utech, F.H. 96-358

Europe

Cerastium fontanum Baumg. ssp. vulgare (Hartman) Greuter & Burdet, 1997 Utech, F.H. 97-349 Eurasia [Cerastium fontanum Baumg. ssp. triviale (Link) Jalas] Cerastium nutans Raf. var. nutans, 2002 Mulvihill, R.S. s.n. Cerastium tomentosum L., 1994 Utech, F.H. 80-112 Europe Dianthus armería L., 1998 Utech, F.H. 98-56 Europe Dianthus barbatus L., 1965 Farnsworth, N.R. WP-1100 Eurasia Dianthus deltoides L., 1994 Utech, F.H. 94-880 Europe Moehringia lateriflora (L.) Fenzl, 2010 Speedy, L. 10-331 Myosoton aguaticum (L.) Moench, 1993 Utech, F.H. 93-1856 Europe Paronychia canadensis (L.) Wood, 1994 Utech, F.H. 94-928 Paronychia fastigiata (Raf.) Fern. var. fastigiata, 1992 Utech, F.H. 92-2826

Sagina procumbens L., 1993 Utech, F.H. 93-734 Saponaria officinalis L., 1998 Utech, F.H. 98-315 Europe Silene antirrhina L., 2002 Isaac, J.A. 14486 Silene armeria L., 1995 Utech, F.H. 95-161 Europe Silene caroliniana Walt. ssp. pensylvanica (Michx.) Clausen, 1942

Knauz, M. s.n.

Silene latifolia Poir., 1998 Utech, F.H. 98-198 Europe Silene nivea (Nutt.) Muhl. ex Otth, 1897 Shafer, J.A. s.n. Silene noctiflora L., 1993 Utech, F.H. 93-1943 Europe Silene stellata (L.) Ait. f., 2009 Speedy, M.L. and Metzgar, T. 09-953 Silene virginica L., 1997 Utech, F.H. 97-286

Silene vulgaris (Moench) Garcke, 1997 Utech, F.H. 97-500 Europe
Spergularia media (L.) K. Presl ex Griseb., 2009 Speedy, M.L. 09-1004 Europe
Stellaria corei Shinners, 2008 Speedy, L. 08-0231
Stellaria graminea L., 1994 Utech, F.H. 94-832 Europe
Stellaria longifolia Muhl. ex Willd., 1994 Utech, F.H. 94-365
Stellaria media (L.) Vill., 1994 Utech, F.H. 94-871 Europe
Stellaria pubera Michx., 2008 Speedy, L. 08-0101

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Commelinaceae

Commelina communis L., 1998 Utech, F.H. 98-265 Asia [Commelina communis L. var. ludens (Miq.) C.B. Clarke] Tradescantia ohiensis Raf., 2009 Speedy, L. 09-0134 **G5:S4** Tradescantia virginiana L., 1995 Utech, F.H. 95-142

Convolvulaceae

Calystegia sepium (L.) R. Br. ssp. americana (Sims) Brummitt, 1995 Utech, F.H. 95-667

Calystegia sepium (L.) R. Br. ssp. angulata Brummitt, 1994 Utech, F.H. 94-1324

Calystegia sepium (L.) R. Br. ssp. appalachiana Brummitt, 1998 Utech, F.H. 98-279

Calystegia sepium (L.) R. Br. ssp. erratica Brummitt, 1998 Utech,

Celastraceae

Celastrus orbiculatus Thunb., 1998 Utech, F.H. 98-293 Japan and China

Celastrus scandens L., 1965 Henry, L.K. s.n.

Euonymus alatus (Thunb.) Sieb. var. alatus, 2008 Speedy, L. 08-0236

Japan and China

Euonymus americanus L., 1959 Henry, L.K. s.n. **G5:S3S4** Euonymus atropurpureus Jacq. var. atropurpureus, 2010 Speedy, L. and Bowers, M. 10-695 Euonymus obovatus Nutt., 1968 Leberman, R.C. s.n.

Chenopodiaceae

Atriplex patula L., 1992 Utech, F.H. 92-2975 Eurasia
Bassia scoparia (L.) A.J. Scott, 1995 Utech, F.H. 95-717 Eurasia [Kochia scoparia (L.) Schrad.]
Chenopodium album L. var. album, 1983 Utech, F.H. 83-573 Europe
Chenopodium album L. var. missouriense (Aellen) I.J. Bassett & C.W. Crompton, 1935 Boardman, C.M. s.n. [Chenopodium missouriense Aellen]

F.H. 98-136

Calystegia silvatica (Kit.) Griseb. ssp. fraterniflora (Mackenzie & Bush) Brummitt, 1998 Utech, F.H. 98-316

Calystegia spithamaea (L.) Pursh ssp. spithamaea, 1997 Utech, F.H. 97-317

Convolvulus arvensis L., 1994 Utech, F.H. 94-952 Europe Ipomoea hederacea Jacq., 1992 Utech, F.H. 92-3313 Ipomoea pandurata (L.) G.F.W. Mey., 1994 Utech, F.H. 94-1912

Cornaceae

Cornus alba L. var. alba, 1994 Utech, F.H. 94-293 [Cornus sericea L] Cornus alternifolia L. f., 2008 Speedy, M.L. 08-839 Cornus amomum P. Mill., 1998 Utech, F.H. 98-92 Cornus florida L., 1997 Utech, F.H. 97-048 Cornus obliqua Raf., 2008 Speedy, M.L. 08-731 [Cornus amomum P. Mill. ssp. obliqua (Raf.) J.S. Wilson] Cornus racemosa Lam., 1997 Utech, F.H. 97-980 Nyssa sylvatica Marsh., 2002 Isaac, B.L. and Isaac, J.A. 14474

Crassulaceae

Chenopodium pratericola Rydb., 1995 Utech, F.H. 95-718 Chenopodium simplex (Torr.) Raf., 2010 Speedy, L. 10-288 [Cheno-

podium gigantospermum Aellen]

Chenopodium urbicum L., 1924 Rowe, A.L. s.n. Europe

Dysphania ambrosioides (L.) Mosyakin & Clemants, 1992 Utech,

F.H. 92-3266 Central America [Chenopodium ambrosioides L.] Dysphania botrys (L.) Mosyakin & Clemants, 1993 Utech, F.H. 93-3254 Europe [Chenopodium botrys L.]

Salsola tragus L., 1919 Rowe, A.L. s.n. Eurasia

Cistaceae

Helianthemum bicknellii Fern., 1897 Shafer, J.A. s.n. **G5:S2** Lechea intermedia Leggett ex Britt. var. intermedia, 1869 Wolle, J., herbarium s.n. Lechea racemulosa Michx., 1935 Demoise, C.W. s.n. Hylotelephium telephium (L.) H. Ohba ssp. telephium, 1995 Utech, F.H. 95-938 Europe [Sedum telephium L.]
Penthorum sedoides L., 1992 Utech, F.H. 92-2314
Sedum sarmentosum Bunge, 1995 Utech, F.H. 95-154 China
Sedum ternatum Michx., 1997 Utech, F.H. 97-212

Cucurbitaceae

Citrullus lanatus (Thunb.) Matsumura & Nakai var. lanatus, 1935 Demoise, C.W. s.n. Tropical Africa Cucurbita pepo L. var. pepo, 1923 Graham, E.H. s.n. Central America Echinocystis lobata (Michx.) Torr. & A. Gray, 1995 Utech, F.H. 95-693 Sicyos angulatus L., 2004 Tracey, C. 2004-0028

Cuscutaceae

Cuscuta cephalanthi Engelm., 1923 Jennings, O.E. s.n. **G5:S2** Cuscuta gronovii Willd. ex J.A. Schultes var. gronovii, 1995 Utech, F.H. 95-738 Cuscuta pentagona Engelm. var. pentagona, 1995 Grund, S.P. 1366 **G5:S2**

Clusiaceae

Hypericum canadense L., 1995 Grund, S.P. 1338
Hypericum densiflorum Pursh, 2005 Isaac, J.A. 18640 G5:S3
Hypericum ellipticum Hook., 2008 Speedy, M.L., Isaac, J.A., Isaac, B.L. & BSPW 08-1018
Hypericum gentianoides (L.) B.S.P., 2008 Speedy, M.L. 08-844
Hypericum mutilum L., 1996 Utech, F.H. 96-409
Hypericum perforatum L., 1998 Utech, F.H. 98-190 Europe
Hypericum prolificum L., 1995 Utech, F.H. 95-917
Hypericum punctatum Lam., 1996 Utech, F.H. 96-398
Triadenum fraseri (Spach) Gleason, 2010 Speedy, L. 10-691
Triadenum virginicum (L.) Raf., 1992 Utech, F.H. 92-2971

Cyperaceae Bulbostylis capillaris (L.) Kunth ex C.B. Clarke ssp. capillaris, 1995 Utech, F.H. 95-698 Carex aestivalis M.A. Curtis ex A. Gray, 2010 Speedy, L. 10-492 Carex albicans Willd.ex Spreng. var. albicans, 1940 Henry, L.K. s.n. [Carex artitecta Mackenzie] Carex albolutescens Schwein., 1925 Jennings, O.E. s.n. Carex albursina Scheldon, 2010 Speedy, L. 10-398 Carex amphibola Steud., 2008 Speedy, M.L. 08-557 Carex annectens (Bickn.) Bickn., 2008 Speedy, M.L. 08-833 Carex appalachica J. Webber & P.W. Ball, 2008 Speedy, M.L. 08-558 Carex argyrantha Tuckerman, 2009 Speedy, M.L., Davis, J. and Byers, D. 09-887

Carex atlantica Bailey ssp. atlantica, 2004 Isaac, B.L. and Isaac, J.A. 17551

Carex baileyi Britt., 2009 Speedy, M.L. 09-994 Carex blanda Dewey, 1993 Utech, F.H. 93-1330 Carex bromoides Schkuhr ex. Wild., 2010 Speedy, L. 10-334 Carex brunnescens (Pers.) Poir. ssp. sphaerostachya (Tuckerman) Kalela, 1996 Wagner, J.D. and Smith, L.L. 1265 Carex bushii Mackenzie, 2008 Speedy, M.L. 08-489 Carex canescens L., 2010 Speedy, L., Davis, J., Byers, D. and Vechter, T. 10-344

Carex cephalophora Muhl. ex Willd., 2008 Speedy, M.L. 08-481 Carex communis Baily var. communis, 2002 Isaac, B.L. and Isaac, J.A. 14470

Carex crinita Lam. var. crinita, 1996 Mulvihill, R.S. and Mulvihill,

Carex squarrosa L., 2009 Speedy, M.L. 09-865 Carex stipata Muhl. Ex Willd. var. maxima Chapman, 2008 Speedy, M.L. 08-728 Carex stipata Muhl. ex Willd. var. stipata, 1997 Utech, F.H. 97-257 Carex striatula Michx., 1919 Gress, E.M. s.n. Carex stricta Lam., 1993 Utech, F.H. 93-1489 Carex swanii (Fern.) Mackenzie, 2008 Speedy, M.L. 08-480 Carex torta Boott ex Tuckerman, 2008 Speedy, L. 08-0154 Carex tribuloides Wahlenb. var. tribuloides, 1994 Utech, F.H. 94-1232 Carex trichocarpa Muhl. ex Wild., 2010 Speedy, L. 10-335 Carex trisperma Dewey, 1996 Smith, L.L. and Wagner, J. 67 Carex virescens Muhl. ex Willd., 1993 Utech, F.H. 93-1261 Carex vulpinoidea Michx., 2008 Speedy, M.L. 08-491 Carex willdenowii Schkuhr ex Willd., 2008 Speedy, M.L. 08-551 Carex woodii Dewey, 1996 Grund, S., McKenna, K., Jones, S., and Hill, R. 1508 Cyperus bipartitus Torr., 1992 Utech, F.H. 92-2559 Cyperus esculentus L. var. leptostachyus Boeckl., 1991 Utech, F.H. 91-620 Cyperus filiculmis Vahl, 1992 Utech, F.H. 92-2813 Cyperus flavescens L., 1991 Utech, F.H. 91-1576 Cyperus strigosus L., 1998 Utech, F.H. 98-295 Dulichium arundinaceum (L.) Britt. var. arundinaceum, 2009 Speedy, L. and Metzgar, T. 09-0500 Eleocharis acicularis (L.) Roemer & J.A. Schultes, 2008 Speedy, M.L., Isaac, J.A., Isaac, B.L. & BSPW 08-1021 Eleocharis obtusa (Willd.) J.A. Schultes, 1995 Grund, S.P. 1370 Eleocharis palustris (L.) Roemer & J.A. Schultes, 1900 Shafer, J.A. s.n. [Eleocharis erythropoda Steud.] Eleocharis tenuis (Willd.) J.A. Schultes var. tenuis, 1994 Utech, F.H. 94-442 Eriophorum virginicum L., 1996 Smith, L.L. and Wagner, J. 69 Fimbristylis autumnalis (L.) Roemer & J.A. Schultes, 1937 Jennings,

B.J. s.n.

Carex cristatella Britt., 1953 Henry, L.K. and Beer, F.H. s.n. Carex debilis Michx. var. debilis, 2008 Speedy, M.L. 08-741 Carex debilis Michx. var. rudgei Bailey, 2008 Speedy, M.L. 08-473

[Carex debilis Michx. ssp. pubera (A. Gray) A.& D. Love] Carex digitalis Willd. var. digitalis, 2008 Speedy, M.L. 08-555 Carex festucacea Schkuhr ex Willd., 2009 Speedy, L. and Metzgar,

T. 09-731

Carex foenea Willd., 1925 Jennings, O.E. s.n. G5:S1 Carex folliculata L., 1995 Grund, S.P. 1325

Carex frankii Kunth, 2008 Speedy, M.L. 08-758

Carex glaucodea Tuckerman ex Olney, 2004 Isaac, B.L. and Isaac, J.A. 17560

Carex gracilescens Steud., 1994 Utech, F.H. 94-598

Carex gracillima Schwein., 2002 Isaac, B.L., Isaac, J.A., Pearson, T. and Byers, D. 14479

Carex granularis Muhl. ex Willd., 2010 Speedy, L. 10-300 Carex grisea Wahlenb., 2009 Speedy, L. 09-0486 Carex gynandra Schwein., 2004 Isaac, B.L. and Isaac, J.A. 17556 Carex hirsutella Mackenzie, 2008 Speedy, M.L. 08-547 Carex hirtifolia Mackenzie, 2009 Speedy, L. 09-0301 Carex hystericina Muhl. ex Willd., 1923 Jennings, O.E. s.n. Carex intumescens Rudge, 2002 Isaac, B.L. and Isaac, J.A. 14422 Carex jamesii Schwein., 2010 Speedy, L. and Bowers, M. 10-231 G5:S4

Carex laevivaginata (Kükenth.) Mackenzie, 2002 Isaac, B.L., Isaac,

J.A., Pearson, T. and Byers, D. 14481

Carex laxiculmis Schwein. var. laxiculmis, 2010 Speedy, L. 10-322 Carex laxiflora Lam., 2008 Speedy, M.L. 08-539

Carex leptalea Wahlenb. ssp. leptalea, 2002 Isaac, B.L., Isaac, J.A., Pearson, T. and Byers, D. 14478

Carex leptonervia (Fern.) Fern., 2010 Speedy, L. 10-265 Carex Iupulina Muhl. ex Willd., 1994 Utech, F.H. 94-1297 Carex lurida Wahlenb., 2002 Isaac, B.L. and Isaac, J.A. 14462 Carex molesta Mackenzie ex Bright, 1923 Jennings, O.E. s.n. G4:S4 Carex normalis Mackenzie, 1997 Utech, F.H. 97-411 Carex oligocarpa Schkuhr ex. Wild., 2009 Speedy, L. 09-0482 Carex pedunculata Muhl. ex Willd., 1901 Holmes, K.R. s.n. Carex pensylvanica Lam., 2002 Bowers, M. s.n. Carex plantaginea Lam., 1996 Wagner, J.D. and Smith, L.L. 1262 Carex platyphylla Carey, 2002 Isaac, B.L. and Isaac, J.A. 14450 Carex prasina Wahlenb., 2010 Speedy, L. 10-303 Carex projecta Mackenzie, 2008 Speedy, M.L. 08-752 Carex radiata (Wahlenb.) Small, 2008 Speedy, M.L. 08-554 Carex rosea Schkuhr ex Willd., 1997 Utech, F.H. 97-374 [Carex convoluta Mackenzie] Carex scabrata Schwein., 1995 Wagner, J.D. and Smith, L.L. 930 Carex scoparia Schkuhr ex Willd. var. scoparia, 2004 Isaac, B.L., Isaac, J.A., Pearson, T., Byers, D. and Hess, L. 17569 Carex sparganioides Muhl. ex Willd., 1997 Utech, F.H. 97-198

O.E. s.n.

Rhynchospora alba (L.) Vahl, 1996 Smith, L.L. and Wagner, J. 68 Schoenoplectus pungens (Vahl) Palla var. pungens, 1947 Henry, L.K. s.n. [Scirpus pungens Vahl] Schoenoplectus purshianus (Fern.) M.T. Strong, 1990 Isaac, B.L. and Isaac, J.A. 3279 [Scirpus purshianus Fern.] Schoenoplectus tabernaemontani (K.C. Gmel.) Palla, 2010 Speedy, L. 10-386 [Scirpus validus Vahl] Scirpus atrocinctus Fern., 1982 Mulvihill, R.S. and Leberman, R.C. s.n. Scirpus atrovirens Willd., 1998 Utech, F.H. 98-62 Scirpus cyperinus (L.) Kunth, 1994 Utech, F.H. 94-1879 Scirpus georgianus Harper, 2009 Speedy, L. and Metzgar, T. 09-0519 Scirpus hattorianus Makino, 1994 Utech, F.H. 94-1390 Scirpus microcarpus J. & K. Presl, 1996 Wagner, J.D. and Smith, L.L. 1290 Scirpus pendulus Muhl., 2008 Speedy, M.L. 08-830 Scirpus polyphyllus Vahl, 1990 Isaac, B.L. and Isaac, J.A. 3276 Trichophorum planifolium (Spreng.) Palla, 1929 Van Dersal, W.R. 1346

[Scirpus verecundus Fern.]

Dioscoreaceae

Dioscorea villosa L., 1998 Utech, F.H. 98-36 [Dioscorea quaternata J.F. Gmel.]

Dipsacaceae

Dipsacus fullonum L., 1998 Utech, F.H. 98-317 Europe [Dipsacus sylvestris Huds.]

Droseraceae

Drosera rotundifolia L. var. rotundifolia, 1983 Utech, F.H. 83-539

Elaeagnaceae

Elaeagnus umbellata Thunb., 2008 Speedy, L. 08-0099 Asia

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Ericaceae

Epigaea repens L., 1998 Utech, F.H. 98-39 Gaultheria procumbens L., 2008 Speedy, M.L. 08-477 Gaylussacia baccata (Wangenh.) K. Koch, 1993 Utech, F.H. 93-995 Kalmia latifolia L., 2008 Speedy, M.L. 08-479 Lyonia ligustrina (L.) DC. var. ligustrina, 1933 McClelland, E.H. s.n. Oxydendrum arboreum (L.) DC., 1941 Jennings, O.E. s.n. G5:S3S4 Rhododendron arborescens (Pursh) Torr., 1997 Leberman, R.C. and Mulvihill, R.S. s.n.

Rhododendron maximum L., 2008 Speedy, M.L. 08-474 Rhododendron periclymenoides (Michx.) Shinners, 1998 Utech,

F.H. 98-35

Rhododendron prinophyllum (Small) Millais, 2010 Metzgar, T. 6-MET Vaccinium angustifolium Ait., 2010 Speedy, L., Davis, J., Byers, D. and Vechter, T. 10-342 Vaccinium corymbosum L., 1994 Utech, F.H. 94-523 Vaccinium macrocarpon Ait., 2010 Speedy, L., Davis, J., Byers, D. and Vechter, T. 10-343 Vaccinium pallidum Ait., 2008 Speedy, M.L. 08-549 Vaccinium stamineum L., 1998 Utech, F.H. 98-42

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Gleditsia triacanthos L., 1994 Utech, F.H. 94-1909 Glycine max (L.) Merr., 1992 Utech, F.H. 92-3269 Asia Gymnocladus dioicus (L.) K. Koch, 1953 none s.n. Kummerowia striata (Thunb.) Schindl., 2003 Paxton, W. s.n. Asia Lathyrus latifolius L., 1998 Utech, F.H. 98-237 Europe Lathyrus sylvestris L., 2004 Isaac, B.L. and Isaac, J.A. 17565 Europe Lespedeza bicolor Turcz., 1967 Netting, J.S. s.n. Japan Lespedeza capitata Michx., 2009 Speedy, M.L. 09-1061 Lespedeza cuneata (Dum.-Cours.) G. Don, 1993 Utech, F.H. 93-2776 Asia

Lespedeza frutescens (L.) Hornem., 1984 Utech, F.H. 84-932 [Lespedeza intermedia (S. Wats.) Britt.]

Lespedeza hirta (L.) Hornem. ssp. hirta, 1957 Henry, L.K. s.n. Lespedeza procumbens Michx., 1992 Utech, F.H. 92-3200

Euphorbiaceae

Acalypha rhomboidea Raf., 1993 Utech, F.H. 93-3271 Chamaesyce maculata (L.) Small, 1994 Utech, F.H. 94-1035 [Euphorbia maculata L.]

Chamaesyce nutans (Lag.) Small, 1995 Grund, S.P. 1362 [Euphorbia nutans Lag.]

Chamaesyce vermiculata (Raf.) House, 1993 Utech, F.H. 93-2278 [Euphorbia vermiculata Raf.]

Euphorbia commutata Engelm. ex A. Gray, 1961 Henry, L.K. s.n. Euphorbia corollata L., 1995 Utech, F.H. 95-697 Euphorbia cyparissias L., 1995 Utech, F.H. 95-111 Eurasia Euphorbia dentata Michx. var. dentata, 1992 Utech, F.H. 92-3262 Euphorbia esula L. var. esula, 1994 Utech, F.H. 94-607 Eurasia Euphorbia lathyris L., 1919 Jennings, O.E. and Rowe, A.L. s.n. Europe Lespedeza repens (L.) W. Bart., 2009 Speedy, M.L. and Metzgar, T. 09-945

Lespedeza virginica (L.) Britt., 1919 Jennings, O.E. s.n. Lespedeza x nuttallii Darl. (pro sp.), 1919 Bright, J. s.n. Lotus corniculatus L., 1997 Utech, F.H. 97-268 Europe Lupinus perennis L. ssp. perennis var. perennis, 1914 Patterson, B.H.

s.n. G5:S3

Medicago lupulina L., 1997 Utech, F.H. 97-331 Eurasia Medicago sativa L. ssp. sativa, 1998 Utech, F.H. 98-322 Eurasia Melilotus officinalis (L.) Lam., 1998 Utech, F.H. 98-227 Eurasia [Melilotus albus Medik.]

Pueraria montana (Lour.) Merr. var. lobata (Willd.) Maesen & S. Almeida, 1992 Utech, F.H. 92-2477 Eastern Asia [Pueraria lobata (Willd.) Ohwi]

Robinia hispida L. var. hispida, 1997 Utech, F.H. 97-288 Robinia pseudoacacia L., 1997 Utech, F.H. 97-293

Robinia viscosa Vent. var. viscosa, 1997 Vincent, M.A. and Lammers,

T.G. 7855

Securigera varia (L.) Lassen, 1997 Utech, F.H. 97-448 Europe [Coronilla varia L.] Senna hebecarpa (Fern.) Irwin & Barneby, 2010 Speedy, L., Metzgar,

Fabaceae

Amphicarpaea bracteata (L.) Fern. var. bracteata, 1994 Utech, F.H. 94-2226

Amphicarpaea bracteata (L.) Fern. var. comosa (L.) C.F. Reed, 1919 Jennings, O.E. s.n.

Apios americana Medik., 1997 Shapira, F. s.n.

Astragalus canadensis L. var. canadensis, 1902 Holmes, K.R. s.n. G5:S2 Baptisia australis (L.) R. Br. var. australis, 1902 Holmes, K.R. s.n. G5:S2 Baptisia tinctoria (L.) R. Br. ex Ait. f., 2010 Speedy, L., Metzgar, T. and Byers, D. 10-520

Cercis canadensis L. var. canadensis, 1993 Utech, F.H. 93-638 Chamaecrista nictitans (L.) Moench ssp. nictitans var. nictitans, 1901 Holmes, K. s.n. [Cassia nictitans L.] Colutea arborescens L., 1993 Utech, F.H. 93-1103 Europe Dalea leporina (Ait.) Bullock, 1993 Utech, F.H. 93-2775 Desmodium canadense (L.) DC., 1919 Jennings, O.E. and Rowe,

T., Byers, D. and Davis, G. 10-631 [Cassia hebecarpa Fern.] Senna marilandica (L.) Link, 1904 Medsger, O.P. s.n. G5:S3 [Cassia medsgeri Shafer]

Strophostyles helvola (L.) Ell., 1992 Utech, F.H. 92-3254 Tephrosia virginiana (L.) Pers., 1901 Shafer, J.A. 118 Trifolium arvense L., 1900 Shafer, J.A. s.n. Eurasia and N. Africa Trifolium aureum Pollich, 1998 Utech, F.H. 98-188 Eurasia Trifolium campestre Schreb., 1997 Utech, F.H. 97-272 Europe Trifolium hybridum L., 1997 Utech, F.H. 97-310 Eurasia Trifolium incarnatum L., 1897 Holmes, K.R. s.n. Europe Trifolium pratense L., 1997 Utech, F.H. 97-444 Europe Trifolium repens L., 1997 Utech, F.H. 97-270 Europe Vicia caroliniana Walt., 1941 Henry, L.K. s.n. Vicia cracca L. ssp. cracca, 1936 Demoise, C.W. s.n. Eurasia Vicia villosa Roth ssp. varia (Host) Corb., 1997 Utech, F.H. 97-254 Europe Vicia villosa Roth ssp. villosa, 1993 Utech, F.H. 93-1782 Europe Wisteria floribunda (Willd.) DC., 1995 Utech, F.H. 95-138 Japan Wisteria frutescens (L.) Poir., 1994 Utech, F.H. 94-956 Wisteria sinensis (Sims) DC., 2009 Speedy, M.L. and Metzgar, T. 09-978 China

A.L. s.n.

Desmodium canescens (L.) DC., 1992 Utech, F.H. 92-2112 Desmodium cuspidatum (Muhl. ex Willd.) DC. ex Loud. var. cuspidatum, 1991 Utech, F.H. 91-2048

Desmodium cuspidatum (Muhl. ex Willd.) DC. ex Loud. var. longifolium (Torr. & A. Gray) Schub., 1953 Henry, L.K. and Beer, F.H. s.n. Desmodium glutinosum (Muhl. ex Willd.) Wood, 1998 Utech, F.H. 98-246

Desmodium nudiflorum (L.) DC., 2009 Speedy, M.L. and Metzgar, T. 09-967

Desmodium paniculatum (L.) DC., 1992 Utech, F.H. 92-2834 Desmodium perplexum Schub., 1998 Utech, F.H. 98-308 Desmodium rotundifolium DC., 2009 Speedy, M.L. and Metzgar, T. 09-941

Fagaceae

Castanea dentata (Marsh.) Borkh., 1992 Utech, F.H. 92-2008 Castanea mollissima Blume, 1967 Walker, B. s.n. Asia Castanea pumila (L.) P. Mill. var. pumila, 1925 Gordon, G.W. s.n. Fagus grandifolia Ehrh., 2008 Speedy, M.L. and Lange, M. 08-1331-2 Quercus acutissima Carruthers, 2009 Speedy, M.L., Bowers, M. and Davis, J. 09-1001 Asia Quercus alba L., 2008 Speedy, M.L. 08-763

Quercus bicolor Willd., 2008 Speedy, M.L. 08-745-2 Quercus coccinea Muenchh., 1993 Utech, F.H. 93-2238 Quercus ilicifolia Wangenh., 1985 Mulvihill, R.S. and Leberman, R.C. 1 Quercus imbricaria Michx., 2008 Speedy, M.L. 08-821 Quercus macrocarpa Michx. var. macrocarpa, 2009 Speedy, M.L. and Bowers, M. 09-1110-1 Quercus marilandica (L.) Muenchh., 2002 Paxton, W. s.n. Quercus montana Willd., 2008 Speedy, M.L. 08-766 [Quercus prinus L.] Quercus muehlenbergii Engelm., 2002 Paxton, W. and Paxton, G. s.n. Quercus palustris Muenchh., 1920 Jennings, O.E. s.n. Quercus prinoides Willd., 1925 Jennings, O.E. s.n. Quercus rubra L., 2008 Speedy, M.L. 08-311 Quercus velutina Lam., 2008 Speedy, M.L. and Bowers, M. 08-1269-2 Quercus xhawkinsiae Sudworth, 1997 Paxton, W. s.n. Quercus xleana Nutt. (pro sp.), 1995 Grund, S.P. 1365 Quercus xsaulii Schneid., 1926 Jennings, O.E. and Jennings, G.K. s.n.

Elodea nuttallii (Planch.) St. John, 1977 Polechko, M. s.n. Vallisneria americana Michx., 1970 Henry, L.K. s.n.

Hydrophyllaceae

Hydrophyllum appendiculatum Michx., 1994 Utech, F.H. 94-283 Hydrophyllum canadense L., 2008 Speedy, M.L. 08-545 Hydrophyllum virginianum L. var. virginianum, 1997 Utech, F.H. 97-353

Phacelia purshii Buckl., 1994 Utech, F.H. 94-782

Iridaceae

Iris pseudacorus L., 1995 Utech, F.H. 95-145 Europe Iris versicolor L., 1938 Jennings, O.E. s.n. Sisyrinchium angustifolium P. Mill., 2002 Isaac, B.L. and Isaac, J.A. 14457

Fumariaceae

Capnoides sempervirens (L.) Borkh., 1945 Jennings, O.E. s.n. [Corydalis sempervirens (L.) Pers.]

Corydalis flavula (Raf.) DC., 1994 Utech, F.H. 94-925 Dicentra canadensis (Goldie) Walp., 1993 Utech, F.H. 93-614 Dicentra cucullaria (L.) Bernh., 1993 Utech, F.H. 93-538

Gentianaceae

Bartonia virginica (L.) B.S.P., 2010 Speedy, L. 10-659 Centaurium pulchellum (Sw.) Hayek ex Hand.-Maz. et al., 2009 Speedy, M.L., WBNC, BSWP & 3RBC 09-983 Europe Gentiana and rewsii Griseb. var. and rewsii, 1992 Utech, F.H. 92-3178 Gentiana clausa Raf., 1992 Utech, F.H. 92-3078 Obolaria virginica L., 2010 Speedy, L. and Metzgar, T. 10-179 Sabatia angularis (L.) Pursh, 1992 Utech, F.H. 92-1937

Geraniaceae

Sisyrinchium atlanticum Bickn., 1982 Utech, F.H. and Ohara, M. 82-197 G5:S1

Sisyrinchium montanum Greene var. montanum, 1982 Leberman, R.C. and Mulvihill, R.S. s.n. Sisyrinchium mucronatum Michx., 1936 Demoise, C.W. s.n.

Juglandaceae

Carya alba (L.) Nutt. ex Ell., 2008 Speedy, M.L. and Lange, M. 08-1333-2 [Carya tomentosa (Lam. ex Poir.) Nutt.] Carya cordiformis (Wangenh.) K. Koch, 1959 Henry, L.K. s.n. Carya glabra (P. Mill.) Sweet, 2009 Speedy, M.L. and Metzgar, T. 09-1106-1

Carya laciniosa (Michx. f.) G. Don, 2004 Paxton, W. s.n. G5:S3S4 Carya ovalis (Wangenh.) Sarg., 1967 Henry, L.K. s.n. Carya ovata (P. Mill.) K. Koch, 1994 Utech, F.H. 94-527 Juglans cinerea L., 2008 Speedy, L. 08-0227 G4:S4 Juglans nigra L., 1997 Utech, F.H. 97-196

Juncaceae

Juncus acuminatus Michx., 1993 Utech, F.H. 93-1676 Juncus articulatus L., 1990 Cusick, A.W. 29074 Juncus brevicaudatus (Engelm.) Fern., 1987 Cusick, A.W. 27006 Juncus bufonius L., 1917 Patterson, B.H. s.n. Juncus canadensis J. Gay ex Laharpe, 1994 Utech, F.H. 94-1880 Juncus dudleyi Wieg., 2009 Speedy, L. and Metzgar, T. 09-741 Juncus effusus L. ssp. pylaei (Laharpe) Kartesz comb. nov. ined., 1902 Holmes, K.R. s.n. Juncus effusus L. ssp. solutus (Fern. & Wieg.) Hämet-Ahti, 2002 Mulvihill, R.S. s.n. Juncus marginatus Rostk., 1990 Isaac, B.L. and Isaac, J.A. 3282 Juncus subcaudatus (Engelm.) Coville & Blake var. subcaudatus, 1995 Grund, S.P. 1336 Juncus tenuis Willd., 1994 Utech, F.H. 94-1294 Juncus torreyi Coville, 2008 Speedy, M.L. 08-832 G5:53 Luzula acuminata Raf. ssp. acuminata, 2004 Isaac, B.L. and Isaac, J.A. 17555 Luzula acuminata Raf. ssp. carolinae (S. Wats.) Z. Kaplan, 1959 Henry, L.K. and Beer, F.H. s.n.

Geranium carolinianum L. var. carolinianum, 1994 Utech, F.H. 94-906 Geranium columbinum L., 1994 Utech, F.H. 94-1011 Eurasia Geranium maculatum L., 1997 Utech, F.H. 97-207 Geranium molle L., 1933 Boardman, C.M. s.n. Europe Geranium pusillum L., 1993 Utech, F.H. 93-749 Europe Geranium robertianum L. ssp. robertianum, 1997 Utech, F.H. 97-223 Geranium sibiricum L., 1983 Utech, F.H. 83-553 Eurasia Geranium thunbergii Sieb. & Zucc. ex Lindl. & Paxton, 1988 Utech, F.H. 88-1091 Eurasia

Grossulariaceae

Ribes americanum P. Mill., 1941 Henry, L.K. s.n. Ribes cynosbati L., 1994 Utech, F.H. 94-707 Ribes hirtellum Michx., 1982 Leberman, R.C. and Mulvihill, R.S. s.n. Ribes lacustre (Pers.) Poir., 1949 Grimm, W.C. s.n. G5:S1 Ribes rotundifolium Michx., 1993 Utech, F.H. 93-866 Ribes rubrum L., 1995 Utech, F.H. 95-116 Eurasia [Ribes sativum Syme]

Haloragaceae

Myriophyllum spicatum L., 1988 Utech, F.H. 88-1105 Eurasia

Hamamelidaceae

Hamamelis virginiana L., 2002 Isaac, B.L. and Isaac, J.A. 14430 Liquidambar styraciflua L., 1936 Demoise, C.W. s.n.

Hippocastanaceae

Aesculus hippocastanum L., 1994 Utech, F.H. 94-334 Eurasia

Hydrangeaceae

Deutzia scabra Thunb., 1991 Utech, F.H. 91-594 Asia Hydrangea arborescens L., 2008 Speedy, M.L. 08-471 Philadelphus coronarius L., 1998 Utech, F.H. 98-19 Eurasia

Hydrocharitaceae

Elodea canadensis Michx., 2006 Speedy, L., Nusser, J. and Bowers, M. LS-06-601

Luzula echinata (Small) F.J. Herm., 1993 Utech, F.H. 93-696 Luzula multiflora (Ehrh.) Lej. ssp. multiflora var. multiflora, 2008 Speedy, M.L. 08-559

Lamiaceae

Agastache nepetoides (L.) Kuntze, 1995 Utech, F.H. 95-939 Agastache scrophulariifolia (Willd.) Kuntze, 1902 Holmes, K.R. s.n. Ajuga reptans L., 1995 Utech, F.H. 95-93 Eurasia Blephilia ciliata (L.) Benth., 1965 Ross, D.H. 132 Blephilia hirsuta (Pursh) Benth. var. hirsuta, 1998 Utech, F.H. 98-193 Clinopodium vulgare L., 1998 Utech, F.H. 98-297 [Satureja vulgaris (L.) Fritsch]

Collinsonia canadensis L., 1998 Utech, F.H. 98-229 Dracocephalum parviflorum Nutt., 1953 Wuslich, J. s.n.

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Glechoma hederacea L., 1997 Utech, F.H. 97-344 Eurasia Hedeoma pulegioides (L.) Pers., 1992 Utech, F.H. 92-2855 Lamiastrum galeobdolon (L.) Ehrend. & Polatschek, 1994 Utech, F.H. 94-305 Eurasia

Lamium amplexicaule L., 1966 Duman, M.G. 66-5 Eurasia Lamium maculatum L., 1994 Utech, F.H. 94-1156 Eurasia Lamium purpureum L. var. purpureum, 1997 Utech, F.H. 97-032 Eurasia

Leonurus cardiaca L. ssp. cardiaca, 1994 Utech, F.H. 94-904 Asia Lycopus americanus Muhl. ex W. Bart., 2004 Paxton, W. s.n. Lycopus uniflorus Michx. var. uniflorus, 1996 Utech, F.H. 96-396 Lycopus virginicus L., 2009 Speedy, M.L. and Metzgar, T. 09-963 Marrubium vulgare L., 1920 Williams, S.H. s.n. Eurasia Meehania cordata (Nutt.) Britt., 1921 Rowe, A.L. s.n. **G5:S1** Mentha arvensis L., 1998 Utech, F.H. 98-280 [Mentha gentilis L.] Mentha spicata L., 1998 Utech, F.H. 98-201 Europe [Mentha longifolia auct. non (L.) Huds.] Mentha x piperita L. (pro sp.), 1995 Utech, F.H. 95-700 Eurasia Mentha x rotundifolia (L.) Huds. (pro sp.), 1992 Utech, F.H. 92-2894 Eurasia Allium cernuum Roth, 1998 Utech, F.H. 98-243 Allium tricoccum Ait., 1993 Utech, F.H. 93-608 Allium vineale L. ssp. vineale, 2002 Isaac, J.A. 14485 Europe Asparagus officinalis L., 1994 Utech, F.H. 94-447 Europe Chamaelirium luteum (L.) A. Gray, 2009 Speedy, L. and Metzgar, T. 09-0364

Clintonia borealis (Ait.) Raf., 2010 Speedy, L. 10-253 Clintonia umbellulata (Michx.) Morong, 2009 Speedy, M.L. and Metzgar, T. 09-971

Convallaria majalis L., 1987 Utech, F.H. 87-065 Europe Erythronium albidum Nutt., 2008 Speedy, M.L. 08-0026 G5:S3 Erythronium americanum Ker-Gawl. ssp. americanum, 1997 Utech, F.H. 97-004

Hemerocallis fulva (L.) L., 1998 Utech, F.H. 98-94 Asia Hemerocallis lilioasphodelus L., 1995 Utech, F.H. 95-140 Europe Hyacinthoides non-scripta (L.) Chouard ex Rothm., 1992 Utech, F.H. 92-555 Europe [Endymion non-scripta (L.) Garcke] Hypoxis hirsuta (L.) Coville, 2010 Speedy, L. and Metzgar, T. 10-177 Lilium canadense L. ssp. editorum (Fern.) Wherry, 2009 Speedy, L. and Metzgar, T. 09-752 Lilium philadelphicum L. var. philadelphicum, 1922 Bright, J. s.n. Lilium superbum L., 1998 Utech, F.H. 98-272 Maianthemum canadense Desf., 2002 Isaac, B.L. and Isaac, J.A. 14431 Maianthemum racemosum (L.) Link ssp. racemosum, 1998 Utech, F.H. 98-83 [Smilacina racemosa (L.) Desf.] Maianthemum stellatum (L.) Link, 2010 Speedy, L. 10-125 [Smilacina stellata (L.) Desf.] Medeola virginiana L., 2002 Isaac, B.L. and Isaac, J.A. 14438 Muscari botryoides (L.) P. Mill., 1946 Demoise, C.W. s.n. Europe Muscari comosum (L.) P. Mill., 1994 Utech, F.H. 94-303 Europe Ornithogalum umbellatum L., 1997 Utech, F.H. 97-149 Europe Polygonatum biflorum (Walt.) Ell. var. commutatum (J.A. & J.H. Schultes) Morong, 2008 Speedy, M.L. 08-733 Polygonatum pubescens (Willd.) Pursh, 2008 Speedy, L. 08-0235 Prosartes lanuginosa (Michx.) D. Don, 1997 Utech, F.H. 97-491 [Disporum lanuginosum (Michx.) Nichols.] Streptopus lanceolatus (Ait.) Reveal var. lanceolatus, 2010 Speedy, L. 10-494 [Streptopus roseus Michx. var. perspectus Fassett] Trillium erectum L., 2008 Speedy, L. 08-0190 Trillium flexipes Raf., 1994 Utech, F.H., Ohara, M., Takasu, H. and Kudoh, H. 94-88 G5:S2 Trillium grandiflorum (Michx.) Salisb., 2008 Speedy, M.L. 08-325 Trillium nivale Riddell, 2008 Speedy, M.L. 08-0021 G4:53 Trillium sessile L., 1992 Utech, F.H. 92-123 Trillium undulatum Willd., 2008 Speedy, M.L. 08-321 Uvularia grandiflora Sm., 1995 Wagner, J.D. and Smith, L.L. 913 Uvularia perfoliata L., 2008 Speedy, M.L. 08-536 Uvularia sessilifolia L., 1997 Utech, F.H. 97-336 Veratrum viride Ait. var. viride, 2010 Speedy, L. 10-332

Mentha x villosa Huds. (pro sp.), 1963 Chamberlain, S. s.n. Eurasia Monarda clinopodia L., 1998 Utech, F.H. 98-320 Monarda didyma L., 1992 Utech, F.H. 92-1995

Monarda fistulosa L. ssp. fistulosa var. fistulosa, 1992 Utech, F.H. 92-2701

Monarda fistulosa L. ssp. fistulosa var. mollis (L.) Benth., 1900 Shafer,

J.A. s.n.

Monarda media Willd., 1979 Utech, F.H. 79-346 Nepeta cataria L., 1995 Utech, F.H. 95-724 Eurasia

Physostegia virginiana (L.) Benth. ssp. virginiana, 1998 Utech, F.H. 98-323

Prunella vulgaris L. ssp. lanceolata (W. Bart.) Hultén, 1998 Utech, F.H. 98-226

Prunella vulgaris L. ssp. vulgaris, 1920 Williams, S.H. s.n. Europe Pycnanthemum incanum (L.) Michx. var. incanum, 2009 Speedy, L. and Metzgar, T. 09-728

Pycnanthemum tenuifolium Schrad., 1941 Jennings, O.E. s.n. Pycnanthemum verticillatum (Michx.) Pers. var. verticillatum, 1900

Thorpe, J. and Shafer, J.A. s.n.

Pycnanthemum virginianum (L.) T. Dur. & B.D. Jackson ex B.L. Robins. & Fern., 1969 Leberman, R.C. s.n.

Salvia lyrata L., 1978 Paxton, W.C. 1

Scutellaria incana Biehler var. incana, 1995 Utech, F.H. 95-773 Scutellaria lateriflora L. var. lateriflora, 1988 Utech, F.H. 88-1126 Scutellaria nervosa Pursh, 1993 Utech, F.H. 93-1569

Scutellaria parvula Michx., 1991 Utech, F.H. 91-1577 [Scutellaria leonardii Epling]

Scutellaria saxatilis Riddell, 2009 Speedy, M.L. 09-841 G3:S1 Stachys pilosa Nutt. var. pilosa, 1963 Chamberlain, S. s.n. [Stachys palustris L. ssp. pilosa (Nutt.) Epling] Stachys tenuifolia Willd., 1993 Utech, F.H. 93-2111

Limnanthaceae

Floerkea proserpinacoides Willd., 1996 Utech, F.H. 96-17

Teucrium canadense L. var. canadense, 1998 Utech, F.H. 98-305

[Teucrium canadense L. var. virginicum (L.) Eat.] Trichostema brachiatum L., 1992 Utech, F.H. 92-2292 Trichostema dichotomum L., 1994 Utech, F.H. 94-2011

Lauraceae

Lindera benzoin (L.) Blume, 2008 Speedy, M.L. 08-0018 Sassafras albidum (Nutt.) Nees, 1998 Utech, F.H. 98-266

Lemnaceae

Lemna minor L., 1993 Utech, F.H. 93-3143 Spirodela polyrhiza (L.) Schleid., 1977 Polechko, M. s.n.

Liliaceae

Allium canadense L. var. canadense, 1994 Utech, F.H. 94-1087

Linaceae

Linum striatum Walt., 1991 Utech, F.H. 91-622 Linum usitatissimum L., 1994 Utech, F.H. 94-500 Europe Linum virginianum L., 1998 Utech, F.H. 98-120

Lythraceae

Cuphea viscosissima Jacq., 1992 Utech, F.H. and Utech, R.J. 92-3122 Lythrum salicaria L., 1998 Utech, F.H. 98-137 Europe

Magnoliaceae

Liriodendron tulipifera L., 2002 Isaac, B.L. and Isaac, J.A. 14428 Magnolia acuminata (L.) L., 2002 Isaac, B.L. and Isaac, J.A. 14440

Malvaceae

Abutilon theophrasti Medik., 1997 Utech, F.H. 97-929 Asia Althaea officinalis L., 2008 Speedy, M.L. 08-848 Europe Hibiscus syriacus L., 1995 Utech, F.H. 95-727 Asia Hibiscus trionum L., 1991 Utech, F.H. 91-2010 Europe Malva moschata L., 1997 Utech, F.H. 97-507 Europe Malva neglecta Wallr., 1994 Utech, F.H. 94-964 Eurasia and N. Africa Sida spinosa L., 1919 Jennings, O.E. s.n. Tropics

Melastromataceae

Rhexia virginica L., 1947 Mason, E. s.n.

Menispermaceae

Menispermum canadense L., 1998 Utech, F.H. 98-71

Molluginaceae

Epilobium parviflorum Schreb., 2010 Speedy, L., Metzgar, T. and Davis, J. 10-604 Europe
Gaura biennis L., 1994 Utech, F.H. 94-2008
Ludwigia alternifolia L., 1998 Utech, F.H. 98-301
Ludwigia palustris (L.) Ell., 1988 Utech, F.H. 88-1104
Oenothera biennis L., 1992 Utech, F.H. 92-2562
Oenothera fruticosa L. ssp. glauca (Michx.) Straley, 1994 Utech, F.H. 94-1300
Oenothera nutans Atkinson & Bartlett, 1940 Henry, L.K. s.n.
Oenothera perennis L., 2008 Speedy, M.L. 08-490
Oenothera villosa Thunb. ssp. villosa, 1998 Utech, F.H. 98-126

Ophioglossum pusillum Raf., 1934 Kirk, H. B. & E. M. Gress s.n.

Mollugo verticillata L., 1995 Utech, F.H. 95-691

Monotropaceae

Monotropa hypopithys L., 1947 McDowell, K. s.n. Monotropa uniflora L., 1993 Utech, F.H. 93-2214

Moraceae

Maclura pomifera (Raf.) Schneid., 1994 Utech, F.H. 94-897 Morus alba L., 1994 Utech, F.H. 94-934 Asia Morus rubra L. var. rubra, 2004 Paxton, W. s.n.

Myricaceae

Comptonia peregrina (L.) Coult., 1919 Jennings, O.E., Jennings, G.K., et al. s.n.

Morella pensylvanica (Mirbel) Kartesz, 1988 Utech, F.H. 88-1109 [Myrica pensylvanica Mirbel]

Najadaceae

Najas flexilis (Willd.) Rostk. & Schmidt, 1977 Polechko, M. s.n. Najas minor All., 1977 Polechko, M. s.n. Europe

Orchidaceae

Corallorhiza maculata (Raf.) Raf. var. maculata, 1934 VanDersal, W.R. s.n.

Corallorhiza odontorhiza (Willd.) Poir., 1947 McDowell, K. s.n. Cypripedium acaule Ait., 1998 Utech, F.H. 98-38 Cypripedium parviflorum Salisb. var. parviflorum, 1922 Jennings, O.E. s.n. **G5:S1** [Cypripedium calceolus L. var. parviflorum (Salisb.) Fern.]

Cypripedium parviflorum Salisb. var. pubescens (Willd.) Knight, 1930 Van Dersal, W.R. 1387 [Cypripedium calceolus L. var. pubescens (Willd.) Correll]

Epipactis helleborine (L.) Crantz, 1997 Utech, F.H. 97-461 Europe Galearis spectabilis (L.) Raf., 2010 Speedy, L. and Metzgar, T. 10-185 Goodyera pubescens (Willd.) R. Br. ex Ait. f., 1997 Shriver, J.S., Shriver, A., Kotsenas, B. and Smith, C. 1020 Isotria verticillata Raf., 1998 Utech, F.H. 98-44 Liparis liliifolia (L.) L.C. Rich. ex Ker-Gawl., 1995 Milliron, G.V. s.n. Liparis loeselii (L.) L.C. Rich., 1993 Koch, D. s.n. Platanthera ciliaris (L.) Lindl., 1955 Henry, L.K. s.n. G5:S2 Platanthera clavellata (Michx.) Luer, 2010 Speedy, L. 10-587 Platanthera fissa (R. Br.) Lindl., 1996 Smith, L.L. and Wagner, J. 64 G5:S2 [Platanthera peramoena (A. Gray) A. Gray] Platanthera flava (L.) Lindl. var. herbiola (R. Br. ex Ait. f.) Luer, 1996 Leberman, R.C. and Mulvihill, R.S. s.n. Platanthera grandiflora (Bigelow) Lindl., 1957 Henry, L.K. s.n. Platanthera lacera (Michx.) G. Don, 1982 Mulvihill, R.S. s.n. Platanthera orbiculata (Pursh) Lindl., 1982 Leberman, R.C. and Mulvihill, R.S. s.n. Platanthera psycodes (L.) Lindl., 1925 Jennings, O.E. s.n. Spiranthes cernua (L.) L.C. Rich., 1992 Utech, F.H. 92-3309 Spiranthes lacera (Raf.) Raf. var. gracilis (Bigelow) Luer, 1967 Leberman, R.C. s.n. Spiranthes lucida (H.H. Eat.) Ames, 1970 Leberman, R.C. s.n. G5:S3 Spiranthes ochroleuca (Rydb.) Rydb., 1937 Jennings, O.E. s.n.

Nelumbonaceae

Nelumbo lutea Willd., 1953 Henry, L.K. and Beer, F.H. s.n.

Nyctaginaceae

Mirabilis nyctaginea (Michx.) MacM., 1994 Utech, F.H. 94-900

Nymphaeaceae

Nuphar advena (Ait.) Ait. F. ssp. advena, 1922 Jennings, O.E. s.n.
 [Nuphar lutea (L.) Sm. ssp. advena (Ait.) Kartesz & Gandhi]
 Nymphaea odorata Ait. ssp. tuberosa (Paine) Wiersma & Hellquist, 1985 Nishida, J.H. and Keplinger, R. 756

Oleaceae

Forsythia viridissima Lindl., 1988 Utech, F.H. 88-058 China Fraxinus americana L., 1997 Utech, F.H. 97-934 Fraxinus nigra Marsh., 1958 Henry, L.K. s.n. Fraxinus pennsylvanica Marsh., 1995 Grund, S.P. 1368 Ligustrum obtusifolium Sieb. & Zucc., 2009 Speedy, L. and Metzgar, T. 09-0361 Japan Ligustrum ovalifolium Hassk., 1943 Jennings, O.E. s.n. Japan

Orobanchaceae

Conopholis americana (L.) Wallr., 2002 Isaac, B.L. and Isaac, J.A. 14475 Epifagus virginiana (L.) W. Bart., 2002 Isaac, B.L. and Isaac, J.A. 14442 Orobanche uniflora L., 2010 Speedy, L. and Zabowski, S. 10-254

Ligustrum vulgare L., 1998 Utech, F.H. 98-290 Europe

Onagraceae

Chamerion angustifolium (L.) Holub ssp. circumvagum (Mosquin) Hoch, 1981 Utech, F.H. 81-101

Circaea alpina L. ssp. alpina, 1987 Mulvihill, R.S. 47

Circaea canadensis (L.) Hill, 2008 Speedy, M.L. 08-482 [Circaea lutetiana auct. non L. ssp. canadensis (L.) Aschers. & Magnus]
Circaea x sterilis D.E. Boufford, 1957 Henry, L.K. s.n. [Circaea intermedia Ehrh.]

Epilobium ciliatum Raf. ssp. ciliatum, 1919 Jennings, O.E., Jennings, G.K. and Bright, J. s.n.

Epilobium coloratum Biehler, 1997 Utech, F.H. 97-953

Oxalidaceae

Oxalis corniculata L., 1994 Utech, F.H. 94-556 Oxalis dillenii Jacq., 1994 Utech, F.H. 94-727 Oxalis grandis Small, 2010 Speedy, L. 10-280 Oxalis montana Raf., 1982 Utech, F.H. 82-192 [Oxalis acetosella auct. non L.] Oxalis stricta L., 2002 Isaac, B.L. and Isaac, J.A. 14449 Oxalis violacea L., 1995 Utech, F.H. 95-136

Papaveraceae

Chelidonium majus L. var. majus, 1997 Utech, F.H. 97-306 Eurasia Macleaya cordata (Willd.) R. Br., 1995 Utech, F.H. 95-703 Eastern Asia Papaver rhoeas L., 1995 Utech, F.H. 95-160 Eurasia and N. Africa Sanguinaria canadensis L., 1994 Utech, F.H. 94-415

Passifloraceae

Passiflora lutea L., 1993 Utech, F.H. 93-1578 G5:52

Phytolaccaceae

Phytolacca americana L. var. americana, 1998 Utech, F.H. 98-312

Plantaginaceae

Plantago aristata Michx., 1993 Utech, F.H. 93-1518 Plantago lanceolata L., 1998 Utech, F.H. 98-130 Europe Plantago major L., 1993 Utech, F.H. 93-1649 Europe Plantago rugelii Dcne., 1998 Utech, F.H. 98-195 Plantago virginica L., 1946 Henry, L.K. s.n.

Platanaceae

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Dichanthelium clandestinum (L.) Gould, 1993 Utech, F.H. 93-2170 [Panicum clandestinum L.]
Dichanthelium commutatum (J.A. Schultes) Gould, 2002 Isaac, B.L. and Isaac, J.A. 14465 [Panicum commutatum J.A. Schultes]
Dichanthelium dichotomum (L.) Gould var. dichotomum, 2008 Speedy, M.L. 08-550 [Panicum dichotomum L.]
Dichanthelium latifolium (L.) Harville, 2002 Isaac, B.L. and Isaac, J.A. 14448 [Panicum latifolium L.]
Dichanthelium linearifolium (Scribn. ex Nash) Gould, 1993 Utech, F.H. 93-1327 [Panicum linearifolium Scribn. ex Nash]
Dichanthelium sphaerocarpon (Ell.) Gould var. isophyllum (Scribn.) Gould & C.A. Clark, 2010 Speedy, L. 10-397 G5:SNR
Dichanthelium sphaerocarpon (Ell.) Gould var. sphaerocarpon, 1922 Bright, J. s.n. [Panicum sphaerocarpon Ell.]
Digitaria ischaemum (Schreb. ex Schweig.) Schreb. ex Muhl., 1997

Platanus occidentalis L., 1994 Utech, F.H. 94-647

Poaceae

Agrostis gigantea Roth, 2008 Speedy, M.L. 08-653 Europe [Agrostis alba auct. non L.]

Agrostis hyemalis (Walt.) B.S.P., 1994 Utech, F.H. 94-791 Agrostis perennans (Walt.) Tuckerman, 1992 Utech, F.H. 92-3072 Agrostis scabra Willd., 2010 Speedy, L., Metzgar, T. and Davis, J. 10-594

Agrostis stolonifera L., 2008 Speedy, M.L. 08-496 Andropogon gerardii Vitman, 1992 Utech, F.H. 92-3102

Andropogon glomeratus (Walt.) B.S.P. var. glomeratus, 2008 Speedy,

M.L. 08-1307 G5:S3 [Andropogon virginicus L. var. abbreviatus (Hack.) Fern. & Grisc.]

Andropogon virginicus L. var. virginicus, 1992 Utech, F.H. 92-3165 Anthoxanthum odoratum L., 1997 Utech, F.H. 97-345 Eurasia Aristida dichotoma Michx. var. dichotoma, 1992 Utech, F.H. 92-2821 Aristida oligantha Michx., 1995 Utech, F.H. 95-825 Arrhenatherum elatius (L.) Beauv. ex J. & K. Presl var. elatius, 1997 Utech, F.H. 97-249 Europe Avena sativa L., 1994 Utech, F.H. 94-1412 Europe Brachyelytrum aristosum (Michx.) Beauv. ex Branner & Coville, 2004 Isaac, B.L. and Isaac, J.A. 17563 Brachyelytrum erectum (Schreb. ex Spreng.) Beauv., 2008 Speedy, M.L. 08-544 Bromus arvensis L., 1995 Utech, F.H. 95-159 Southern Europe [Bromus japonicus Thunb.] Bromus ciliatus L., 1991 Utech, F.H. 91-1817 Bromus inermis Leyss., 1997 Utech, F.H. 97-495 Europe Bromus latiglumis (Scribn. ex Shear) A.S. Hitchc., 1994 Utech, F.H. 94-1351 [Bromus altissimus Pursh] Bromus pubescens Muhl. ex Willd., 1993 Utech, F.H. 93-1777 Bromus racemosus L., 1997 Utech, F.H. 97-248 Europe [Bromus commutatus Schrad.] Bromus sterilis L., 1994 Utech, F.H. 94-911 Europe Bromus tectorum L., 1994 Utech, F.H. 94-766 Europe Calamagrostis coarctata (Torr.) Torr. ex Eat., 1928 Jennings, O.E. s.n. [Calamagrostis cinnoides auct. non (Muhl.) W. Bart.]

Utech, F.H. 97-960 Eurasia

Digitaria sanguinalis (L.) Scop., 1995 Utech, F.H. 95-730 Europe Echinochloa crus-galli (L.) Beauv., 1995 Mulvihill, R.S. s.n. Eurasia Echinochloa muricata (Beauv.) Fern. var. muricata, 1919 Jennings, O.E. s.n.

Eleusine indica (L.) Gaertn., 1995 Utech, F.H. 95-710 Old World Tropics
Elymus canadensis L., 1979 Utech, F.H. 79-364
Elymus hystrix L. var. hystrix, 1997 Utech, F.H. 97-455 [Hystrix patula Moench]
Elymus repens (L.) Gould, 1997 Utech, F.H. 97-505 Eurasia [Elytrigia repens (L.) Desv. ex Nevski]
Elymus riparius Wieg., 1998 Utech, F.H. 98-310
Elymus villosus Muhl. ex Willd., 2008 Speedy, M.L. 08-643

Elymus riparius Wieg., 1998 Utech, F.H. 98-310 Elymus villosus Muhl. ex Willd., 2008 Speedy, M.L. 08-643 Elymus virginicus L. var. virginicus, 1994 Utech, F.H. 94-1401 Eragrostis capillaris (L.) Nees, 1995 Utech, F.H. 95-920 Eragrostis cilianensis (All.) Vign. ex Janchen, 1960 Shaw, Phyllis A. s.n. Europe

Eragrostis frankii C.A. Mey. ex Steud., 1962 Henry, L.K. s.n. Eragrostis hypnoides (Lam.) B.S.P., 1977 Polechko, M. s.n. Eragrostis minor Host, 1994 Utech, F.H. 94-2005 Europe Eragrostis pectinacea (Michx.) Nees ex Steud. var. pectinacea, 1997 Utech, F.H. 97-958 Eragrostis spectabilis (Pursh) Steud., 1995 Utech, F.H. 95-928 Festuca arundinacea Schreb., 1994 Utech, F.H. 94-945 Europe [Schedonorus arundinaceus (Schreb.) Dumort.] Festuca ovina L., 1992 Utech, F.H. 92-2802 Europe Festuca pratensis Huds., 1997 Utech, F.H. 97-410 Europe [Festuca elatior L. p.p.] Festuca subverticillata (Pers.) Alexeev, 2008 Speedy, M.L. 08-560 [Festuca obtusa Biehler] Glyceria canadensis (Michx.) Trin., 2010 Speedy, L. and Bowers, M. 10-666 Glyceria melicaria (Michx.) F.T. Hubbard, 2002 Mulvihill, R.S. s.n. Glyceria septentrionalis A.S. Hitchc., 1904 Jennings, O.E. s.n. Glyceria striata (Lam.) A.S. Hitchc., 2008 Speedy, M.L. 08-739 Holcus lanatus L., 1998 Utech, F.H. 98-25 Europe Hordeum jubatum L. ssp. jubatum, 1993 Utech, F.H. 93-2028 [Critesion jubatum (L.) Nevski] Hordeum vulgare L., 1995 Utech, F.H. 95-156 Eurasia Leersia oryzoides (L.) Sw., 1992 Utech, F.H. 92-3193 Leersia virginica Willd., 1995 Utech, F.H. 95-817 Leptochloa fusca (L.) Kunth ssp. fascicularis (Lam.) N. Snow, 1986 Cusick, A.W. 26094 [Leptochloa fascicularis (Lam.) A. Gray var. acuminata (Nash) Gleason] Lolium perenne L. ssp. multiflorum (Lam.) Husnot, 1997 Utech, F.H. 97-453 Europe [Lolium multiflorum Lam.] Lolium perenne L. ssp. perenne, 1997 Utech, F.H. 97-305 Europe Microstegium vimineum (Trin.) A. Camus, 1993 Utech, F.H. 93-3130 **Tropical Asia**

Cinna arundinacea L., 1995 Mulvihill, R.S. s.n.

Cynodon dactylon (L.) Pers., 1994 Paxton, W. s.n. Old World Tropics Dactylis glomerata L. ssp. glomerata, 1998 Utech, F.H. 98-22 Europe Danthonia compressa Austin, 2008 Speedy, M.L. 08-561 Danthonia spicata (L.) Beauv. ex Roemer & J.A. Schultes, 1994 Utech, F.H. 94-1167

Diarrhena americana Beauv., 2004 Coxe, R. s.n. **G4G5:S1** Dichanthelium acuminatum (Sw.) Gould & C.A. Clark var. acuminatum (Torr.) Freckmann, 2008 Speedy, M.L. 08-487 [Panicum lanuginosum Ell., non Bosc ex Spreng.] Dichanthelium boscii (Poir.) Gould & C.A. Clark, 2010 Speedy, L. 10-278 [Panicum boscii Poir.]

Muhlenbergia frondosa (Poir.) Fern., 1992 Utech, F.H. 92-730
Muhlenbergia schreberi J.F. Gmel., 1995 Utech, F.H. 95-924
Muhlenbergia sylvatica (Torr.) Torr. ex A. Gray, 2010 Speedy, L., Metzgar, T. and Davis, J. 10-616
Muhlenbergia tenuiflora (Wild.) B.S.P., 2010 Speedy, L., Metzgar, T.

and Davis, J. 10-593

Panicum capillare L., 1992 Utech, F.H. and Utech, R.J. 92-3112 Panicum dichotomiflorum Michx. var. dichotomiflorum, 1997 Utech,

F.H. 97-959

Panicum gattingeri Nash, 1994 Utech, F.H. 94-2227 Panicum miliaceum L. ssp. miliaceum, 1983 Utech, F.H. 83-575 Eurasia Panicum philadelphicum Bernh. ex Trin., 1936 De Moise, C.U. s.n. Panicum rigidulum Bosc ex Nees var. elongatum (Pursh) Lelong, 1900

Shafer, J.A. s.n. [Panicum stipitatum Nash]
Panicum virgatum L. var. virgatum, 1995 Utech, F.H. 95-824
Paspalum setaceum Michx., 1964 Henry, L.K. s.n.
Phalaris arundinacea L., 1998 Utech, F.H. 98-223
Phleum pratense L., 1997 Utech, F.H. 97-506 Europe
Phragmites australis (Cav.) Trin. ex Steud. ssp. australis, 1995 Utech, F.H. 95-715 Eurasia
Poa alsodes A. Gray, 2008 Speedy, M.L. 08-541
Poa annua L., 2002 Mulvihill, R.S. s.n. Eurasia
Poa compressa L., 2002 Isaac, B.L. and Isaac, J.A. 14460 Europe
Poa cuspidata Nutt., 2008 Speedy, M.L. 08-0066
Poa paludigena Fern. & Wieg., 1995 Wagner, J.D. and Smith, L.L.

Polemoniaceae

Phlox divaricata L. ssp. divaricata, 1997 Utech, F.H. 97-285
Phlox maculata L. ssp. maculata, 1992 Utech, F.H. 92-1958
Phlox maculata L. ssp. pyramidalis (Sm.) Wherry, 1957 Henry, L.K. s.n.
Phlox paniculata L., 2008 Speedy, M.L. 08-845
Phlox stolonifera Sims, 1994 Utech, F.H. and Kawano, S. 94-307
Phlox subulata L. ssp. subulata, 1994 Utech, F.H. 94-561
Polemonium reptans L. var. reptans, 1994 Utech, F.H., Ohara, M., Takasu, H. and Kudoh, H. 94-77

Polygalaceae

Polygala ambigua Nutt., 1919 Knauz, M.B. s.n. [Polygala verticillata L. var. ambigua (Nutt.) Wood]
Polygala paucifolia Willd., 2002 Isaac, B.L. and Isaac, J.A. 14463
Polygala sanguinea L., 2008 Speedy, M.L. 08-842
Polygala verticillata L. var. verticillata, 2008 Speedy, M.L. 08-841 [Polygala verticillata L. var. isocycla Fern.]

928 G3:S3

Poa palustris L., 1994 Utech, F.H. 94-729

Poa pratensis L. ssp. pratensis, 2008 Speedy, M.L. 08-310 Europe Poa saltuensis Fern. & Wieg. ssp. saltuensis, 2009 Speedy, L. 09-0460 Poa sylvestris A. Gray, 2008 Speedy, M.L. 08-632

Poa trivialis L., 2008 Speedy, L., M. Bowers and D. White 08-0308

Europe

Puccinellia distans (Jacq.) Parl. ssp. hauptiana (Trin. ex Krecz.) W.E.
 Hughes, 1994 Utech, F.H. 94-701
 Schizachyrium scoparium (Michx.) Nash var. scoparium, 1993 Utech, F.H. 93-3260

Polygonaceae

Fagopyrum esculentum Moench, 1935 Demoise, C.W. s.n. Asia
Fallopia cilinodis (Michx.) Holub, 1995 Utech, F.H. 95-913 [Polygonum cilinode Michx.]
Fallopia convolvulus (L.) A. Löve, 1988 Utech, F.H. 88-1095 Europe [Polygonum convolvulus L.]
Fallopia japonica (Houtt.) R. Decr., 1999 Smith, L.L. and Wagner, J. 90 Japan [Polygonum cuspidatum Sieb. & Zucc.]
Fallopia sachalinensis (F. Schmidt) R. Decr., 1994 Utech, F.H. 94-2015 Asia [Polygonum sachalinense F. Schmidt]
Fallopia scandens (L.) Holub, 1998 Utech, F.H. 98-235 [Polygonum scandens L.]
Persicaria amphibia (L.) S.F. Gray p.p., 2010 Speedy, L. and Speedy, J. 10-580 [Polygonum amphibium L.]

Persicaria arifolia (L.) Harolds., 2008 Speedy, M.L. 08-744 [Polygonum arifolium L.]

Persicaria hydropiper (L.) Delarbre, 1993 Utech, F.H. 93-3072 Europe

Secale cereale L., 1997 Utech, F.H. 97-343 Eurasia Setaria faberi Herrm., 1996 Utech, F.H. 96-406 Eastern Asia Setaria italica (L.) Beauv., 1907 Holmes, K.R. s.n. Eurasia Setaria pumila (Poir) Roemer & J.A. Schultes ssp. *pumila*, 1996 Utech,

F.H. 96-364 Europe [Setaria glauca (L.) Beauv.] Setaria verticillata (L.) Beauv., 1981 Utech, F.H. 81-391 Eurasia Setaria viridis (L.) Beauv. var. viridis, 1995 Utech, F.H. 95-737 Eurasia Sorghastrum nutans (L.) Nash, 1994 Utech, F.H. 94-2217 Sorghum halepense (L.) Pers., 1994 Utech, F.H. 94-2208 Mediterranean

Spartina pectinata Bosc ex Link, 1900 Shafer, J.A. and Thorpe, J. s.n. Sphenopholis intermedia (Rydb.) Rydb., 1994 Utech, F.H. 94-948 [Sphenopholis obtusata (Michx.) Scribn. var. major (Torr.) K.S. Erdman]

Sphenopholis nitida (Biehler) Scribn., 2009 Speedy, L. and Metzgar, T. 09-0338 [Polygonum hydropiper L.]

Persicaria hydropiperoides (Michx.) Small, 1992 Utech, F.H. 92-2992 [Polygonum hydropiperoides Michx.]

Persicaria lapathifolia (L.) S.F. Gray, 1960 Shaw, Phyllis A. s.n. Europe [Polygonum lapathifolium L.]

Persicaria longiseta (Bruijn) Kitagawa, 1994 Utech, F.H. 94-2218 Asia [Polygonum caespitosum Blume var. longisetum (Bruijn) A.N. Steward]

Persicaria maculosa S.F. Gray, 1998 Utech, F.H. 98-292 Europe [Polygonum persicaria L.]

Persicaria orientalis (L.) Spach, 1931 McClintock, N. s.n. India [Polygonum orientale L.]

Persicaria pensylvanica (L.) M. Gómez, 1998 Utech, F.H. 98-321 [Polygonum pensylvanicum L.]

Persicaria perfoliatum (L.) H. Gross, 2010 Speedy, L., McCluskey, K. and Turano, K. 10-620 Europe [Polygonum perfoliatum L.] Persicaria posumbu (Buch.-Ham. ex D. Don) H. Gross, 1997 Utech, F.H. 97-436 Eastern Asia [Polygonum caespitosum Blume] Persicaria punctata (Ell.) Small, 1992 Utech, F.H. 92-3291 [Polygonum punctatum Ell.] Persicaria sagittata (L.) Gross., 1997 Utech, F.H. 97-955 [Polygonum sagittatum L.] Persicaria virginiana (L.) Gaertn., 1998 Utech, F.H. 98-307 [Polygonum virginianum L.] Polygonum aviculare L. ssp. aviculare, 1993 Utech, F.H. 93-2021 Europe Polygonum erectum L., 1902 Holmes, K.R. s.n. Rumex acetosella L., 1997 Utech, F.H. 97-347 Eurasia Rumex altissimus Wood, 1994 Utech, F.H. 94-789 Rumex crispus L. ssp. crispus, 1997 Utech, F.H. 97-236 Europe

Sphenopholis obtusata (Michx.) Scribn., 1994 Utech, F.H. 94-613 Sphenopholis pensylvanica (L.) A.S. Hitchc., 1993 Utech, F.H. 93-1142 Sporobolus vaginiflorus (Torr. ex A. Gray) Wood var. vaginiflorus,

1994 Utech, F.H. 94-2223

Triticum aestivum L., 1995 Utech, F.H. 95-146 Eurasia

Vulpia octoflora (Walt.) Rydb. var. tenella (Willd.) Fern., 1903 Shafer,

J.A. and Medsger, O.P. s.n.

Zea mays L. ssp. mays, 1992 Utech, F.H. 92-3101 Tropical America

Podostemaceae

Podostemum ceratophyllum Michx., 1898 Britton, N.L. s.n. G5:S4

Rumex mexicanus Meisn., 1919 Williams, S.H. s.n. Rumex obtusifolius L., 1998 Utech, F.H. 98-124 Europe Rumex patientia L., 1936 Demoise, C.W. s.n. Europe Rumex verticillatus L., 1993 Utech, F.H. 93-1363

Polypodiaceae

Phegopteris connectilis (Michx.) Watt, 1877 Peirron, P.E. 148

Portulacaceae

Claytonia caroliniana Michx., 2008 Speedy, M.L. 08-0016 Claytonia virginica L. var. virginica, 1997 Utech, F.H. 97-040 Portulaca oleracea L., 1992 Utech, F.H. 92-2899

Potamogetonaceae

Potamogeton crispus L., 1977 Polechko, M. s.n. Europe Potamogeton diversifolius Raf., 2010 Speedy, L. and Speedy, J. 10-578 Potamogeton epihydrus Raf., 2008 Speedy, M.L. 08-747 Potamogeton foliosus Raf. ssp. foliosus, 1977 Polechko, M. s.n. Potamogeton natans L., 1977 Polechko, M. s.n. Potamogeton pusillus L. ssp. tenuissimus (Mert. & Koch) Haynes & C.E. Hellquist, 1977 Polechko, M. s.n.

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Ranunculus allegheniensis Britt., 1997 Utech, F.H. 97-031 Ranunculus ambigens S. Wats., 1903 Medsger, O.P. s.n. G4:S3 Ranunculus bulbosus L., 1993 Utech, F.H. 93-834 Europe Ranunculus hispidus Michx. var. caricetorum (Greene) T. Duncan, 2010 Speedy, L. 10-147

Ranunculus hispidus Michx. var. hispidus, 2009 Speedy, L. 09-0071 Ranunculus hispidus Michx. var. nitidus (Chapman) T. Duncan, 1994

Utech, F.H. 94-418 [Ranunculus septentrionalis Poir.] Ranunculus micranthus Nutt., 1996 Grund, S. and Smith, L.L. 1441 Ranunculus pensylvanicus L. f., 1994 Utech, F.H. 94-275 Ranunculus recurvatus Poir. var. recurvatus, 1997 Utech, F.H. 97-497 Ranunculus repens L., 1997 Utech, F.H. 97-360 Europe Ranunculus sceleratus L. var. sceleratus, 1992 Utech, F.H. 92-842 Thalictrum coriaceum (Britt.) Small, 2010 Speedy, L. 10-298-2 G4:52 Thalictrum dioicum L., 1994 Utech, F.H., Ohara, M., Takasu, H. and Kudoh, H. 94-64 Thalictrum pubescens Pursh, 1998 Utech, F.H. 98-207 Thalictrum revolutum DC., 1919 Jennings, O.E. and Rowe, A.L. s.n. Thalictrum thalictroides (L.) Eames & Boivin, 2008 Speedy, M.L. 08-0024

Primulaceae

Lysimachia arvensis (L.) U. Manns & A. Anderb., 1999 Paxton, W. s.n. Europe [Anagallis arvensis L.] Lysimachia ciliata L., 1997 Utech, F.H. 97-460 Lysimachia nummularia L., 1994 Utech, F.H. 94-1237 Europe Lysimachia guadrifolia L., 1998 Utech, F.H. 98-32 Lysimachia terrestris (L.) B.S.P., 1996 Wagner, J.D. and Smith, L.L. 1289 Lysimachia vulgaris L., 2008 Speedy, M.L. and Bowers, M. 08-939 Eurasia

Trientalis borealis Raf. ssp. borealis, 2008 Speedy, M.L. 08-324

Pyrolaceae

Chimaphila maculata (L.) Pursh, 1988 Mulvihill, R.S. and Leber-

Resedaceae

Reseda lutea L., 1994 Utech, F.H. 94-954 Europe

Rhamnaceae

Ceanothus americanus L., 1946 Mozingo, H.N. s.n. Frangula alnus P. Mill., 2006 Paxton, W., Poglein. B. and Ryba, R. s.n. Europe Rhamnus cathartica L., 1995 Utech, F.H. 95-930 Europe

Rosaceae

Agrimonia gryposepala Wallr., 1996 Utech, F.H. 96-400 Agrimonia parviflora Ait., 1998 Utech, F.H. 98-311 Agrimonia pubescens Wallr., 1993 Utech, F.H. 93-2744 Agrimonia striata Michx., 2009 Speedy, M.L. and Metzgar, T. 09-959 Amelanchier arborea (Michx. f.) Fern., 1995 Utech, F.H. 95-90 Amelanchier laevis Wieg., 2008 Speedy, M.L. 08-319 Amelanchier sanguinea (Pursh) DC. var. sanguinea, 1928 Bright, J. 431 G5:S2 [Amelanchier humilis Wieg.] Amelanchier spicata (Lam.) K. Koch, 2010 Speedy, L. 10-430 [Amelanchier stolonifera Wieg.] Amelanchier x intermedia Spach (pro sp.), 1972 Leberman, R.C. s.n. Aruncus dioicus (Walt.) Fern. var. dioicus, 1998 Utech, F.H. 98-86 Chaenomeles speciosa (Sweet) Nakai, 1997 Utech, F.H. 97-027 China Crataegus calpodendron (Ehrh.) Medik., 1912 Jennings, O.E. s.n. Crataegus chrysocarpa Ashe var. chrysocarpa, 2010 Speedy, L. and Bowers, M. 10-085 [Crataegus coccinea L. p.p.] Crataegus crus-galli L., 1997 Utech, F.H. 97-355 Crataegus dissona Sarg., 1907 Jennings, O.E. s.n. Crataegus dodgei Ashe, 1917 Jennings, O.E. s.n. Crataegus flabellata (Spach) Kirchn., 2010 Speedy, L., Metzgar, T., Byers, D. and Davis, G. 10-627-1 Crataegus holmesiana Ashe, 1994 Utech, F.H. 94-165 Crataegus intricata Lange, 1917 Jennings, O.E. and Jennings, G.K. s.n. Crataegus macrosperma Ashe, 2010 Speedy, L., Metzgar, T., Byers, D. and Davis, G. 10-628-1 Crataegus pedicellata Sarg., 1997 Utech, F.H. 97-016 Crataegus pruinosa (Wendl. f.) K. Koch, 1989 Utech, F.H. 89-174 Crataegus punctata Jacq., 1994 Utech, F.H. 94-368 Crataegus succulenta Schrad. ex Link, 1994 Utech, F.H. 94-502 Crataegus x disperma Ashe, 1907 Jennings, O.E. tree 86 [Crataegus punctata Jacq. var. pausiaca (Ashe) Palmer] Cydonia oblonga P. Mill., 1954 Henry, L.K. s.n. Eurasia Filipendula rubra (Hill) B.L. Robins., 1981 Utech, F.H. 81-059 G4G5:S1S2 Fragaria vesca L. ssp. americana (Porter) Staudt, 1919 Jennings, O.E. s.n.

man, R.C. 50

Chimaphila umbellata (L.) W. Bart. ssp. cisatlantica (Blake) Hultén, 1900 Miller, W.N. s.n.

Pyrola americana Sweet, 1936 Demoise, C.W. s.n.

Ranunculaceae

Aconitum uncinatum L., 2009 Speedy, M.L. 09-1031 G4:S2 Actaea pachypoda Ell., 1993 Utech, F.H. 93-3081 [Actaea alba auct. non (L.) P. Mill.]

Actaea podocarpa DC., 2010 Speedy, L., Bowers, M. and White, D. 10-677 G4:S3 [Cimicifuga americana Michx.] Actaea racemosa L., 1998 Utech, F.H. 98-95 [Cimicifuga racemosa

(L.) Nutt.]

Anemone quinquefolia L. var. quinquefolia, 1993 Utech, F.H. 93-540 Anemone virginiana L. var. virginiana, 1998 Utech, F.H. 98-219 Aquilegia canadensis L., 2008 Speedy, M.L. 08-495 Aquilegia vulgaris L., 1994 Utech, F.H. 94-488 Europe Caltha palustris L. var. palustris, 1993 Utech, F.H. 93-596 Clematis virginiana L., 1995 Utech, F.H. 95-739 Consolida ajacis (L.) Schur, 1884 Hill, C. s.n. Europe [Consolida ambigua (L.) P. W. Ball & Heywood] Coptis trifolia (L.) Salisb., 1983 Utech, F.H. 83-540 Delphinium exaltatum Ait., 1995 Koch, D. s.n. G3:S1 Delphinium tricorne Michx., 1994 Utech, F.H. 94-268 Helleborus viridis L., 1968 Netting, J. s.n. Europe Hepatica nobilis Schreber var. acuta (Pursh) Steyermark, 2008 Speedy, M.L. 08-0017 [Hepatica acutiloba DC.] Hepatica nobilis Schreber var. obtusa (Pursh) Steyermark, 2010 Speedy, L. and Metzgar, T. 10-176 [Hepatica americana (DC.) Ker-Gawl.] Hydrastis canadensis L., 2008 Speedy, M.L. 08-634 G4:S4 Ranunculus abortivus L., 1996 Utech, F.H. 96-3 Ranunculus acris L. var. acris, 1995 Utech, F.H. 95-155 Europe

Fragaria vesca L. ssp. vesca, 1997 Utech, F.H. 97-383 Europe
Fragaria virginiana Duchesne ssp. virginiana, 1995 Utech, F.H. 95-83
Geum canadense Jacq. var. canadense, 1998 Utech, F.H. 98-80
Geum laciniatum Murr. var. laciniatum, 1904 Jennings, O.E. s.n.
Geum vernum (Raf.) Torr. & A. Gray, 1997 Utech, F.H. 97-213
Geum virginianum L., 1936 Demoise, C.W. s.n.
Gillenia trifoliata (L.) Moench, 1994 Utech, F.H. 94-1126 [Porteranthus trifoliatus (L.) Britt.]

Malus baccata (L.) Borkh., 2008 Speedy, L. and Van de Venne, P. 08-0189 Eurasia

Malus coronaria (L.) P. Mill., 1995 Paxton, W. s.n. [Malus glaucescens Rehd.]

Malus pumila P. Mill., 2008 Speedy, M.L. 08-469 Eurasia Photinia floribunda (Lindl.) Robertson & Phipps, 1972 Leberman, Spiraea alba Du Roi var. alba, 2008 Speedy, M.L. 08-729 Spiraea alba Du Roi var. latifolia (Ait.) Dippel, 1998 Utech, F.H. 98-168 Spiraea japonica L. f. var. fortunei (Planch.) Rehd., 1995 Utech, F.H. 95-752 Japan Spiraea prunifolia Sieb. & Zucc., 1994 Utech, F.H. 94-242 Asia Spiraea tomentosa L., 1998 Utech, F.H. 98-256 Waldsteinia fragarioides (Michx.) Tratt. ssp. fragarioides, 1994 Utech, F.H. 94-1122

Rubiaceae

Cephalanthus occidentalis L., 2008 Speedy, M.L. 08-757 Diodia teres Walt., 1993 Utech, F.H. 93-2159 Galium aparine L., 2008 Speedy, L. 08-0230 Galium asprellum Michx., 1995 Utech, F.H. 95-775 Galium boreale L., 1923 Jennings, O.E. s.n. Galium circaezans Michx., 1995 Utech, F.H. 95-774 [Galium circaezans Michx. var. hypomalacum Fern.] Galium concinnum Torr. & A. Gray, 1992 Utech, F.H. 92-2704 Galium lanceolatum Torr., 2010 Speedy, L. 10-281 Galium mollugo L., 1998 Utech, F.H. 98-118 Eurasia Galium pilosum Ait., 1936 Demoise, C.W. s.n. Galium tinctorium (L.) Scop., 2009 Speedy, L. 09-701 Galium triflorum Michx., 1998 Utech, F.H. 98-172 Galium verum L. var. verum, 1987 Utech, F.H. 87-189 Eurasia Houstonia caerulea L., 2008 Speedy, M.L. 08-553 Houstonia canadensis Willd. ex Roemer & J.A. Schultes, 1915 Patterson, B.H. s.n. Houstonia serpyllifolia Michx., 2003 Isaac, B.L. and Isaac, J.A. 16095 G4?:S1 Mitchella repens L., 2002 Isaac, B.L. and Isaac, J.A. 14469

R.C. s.n. [Aronia prunifolia (Marsh.) Rehd.]

Photinia melanocarpa (Michx.) Robertson & Phipps, 1993 Utech,

F.H. 93-1228 [Aronia melanocarpa (Michx.) Ell.]

Photinia pyrifolia (Lam.) Robertson & Phipps, 2010 Speedy, L., Davis,

J., Byers, D. and Vechter, T. 10-340 [Aronia arbutifolia (L.) Pers.] Physocarpus opulifolius (L.) Maxim. var. opulifolius, 1998 Utech, F.H. 98-309

Potentilla canadensis L. var. canadensis, 1992 Utech, F.H. 92-501 Potentilla norvegica L. ssp. monspeliensis (L.) Aschers. & Graebn., 1994 Utech, F.H. 94-1411

Potentilla recta L., 1997 Utech, F.H. 97-309 Europe Potentilla simplex Michx., 2002 Isaac, B.L. and Isaac, J.A. 14425 Prunus alleghaniensis Porter var. alleghaniensis, 1923 Jennings,

O.E. s.n. G4:S2S3

Prunus americana Marsh., 1997 Utech, F.H. 97-049 Prunus avium (L.) L., 1995 Utech, F.H. 95-126 Eurasia Prunus domestica L. var. domestica, 1993 Utech, F.H. 93-196 Eurasia Prunus mahaleb L., 1975 None 75-13 Europe Prunus munsoniana W. Wight & Hedrick, 1991 Leberman, R.C. and Mulvihill, R.S. s.n. Prunus pensylvanica L. f. var. pensylvanica, 1995 Utech, F.H. 95-87 Prunus persica (L.) Batsch, 1937 Demoise, C.W. s.n. Asia Prunus serotina Ehrh. var. serotina, 2008 Speedy, M.L. 08-313 Prunus virginiana L., 1996 Utech, F.H. 96-12 Rosa canina L., 2002 Isaac, J.A. 14483 Europe Rosa carolina L. ssp. carolina, 2009 Speedy, L. and Metzgar, T. 09-0329 Rosa gallica L., 1920 Jennings, O.E. s.n. Europe Rosa multiflora Thunb. ex Murr., 1998 Utech, F.H. 98-180 Asia Rosa palustris Marsh., 2008 Speedy, M.L. 08-727 Rosa rubiginosa L., 1941 Jennings, O.E. s.n. Europe [Rosa eglanteria L.] Rubus allegheniensis Porter var. allegheniensis, 2002 Isaac, B.L. and Isaac, J.A. 14433 Rubus canadensis L., 2009 Speedy, L. and Metzgar, T. 09-0382 Rubus flagellaris Willd., 2008 Speedy, M.L. 08-379 [Rubus enslenii Tratt.]

Rutaceae

Ptelea trifoliata L. ssp. trifoliata var. trifoliata, 1949 Bot. Soc. of

Rubus hispidus L., 2009 Speedy, L. and Metzgar, T. 09-0504
Rubus idaeus L. ssp. strigosus (Michx.) Focke, 1936 Demoise, C.W.
s.n. [Rubus strigosus Michx.]
Rubus illecebrosus Focke, 1964 Buker, W.E. s.n. Japan
Rubus laciniatus Willd., 1994 Utech, F.H. 94-739 Europe
Rubus laudatus Berger, 1962 Henry, L.K. s.n.
Rubus occidentalis L., 1998 Utech, F.H. 98-51
Rubus odoratus L. var. odoratus, 1998 Utech, F.H. 93-1227
Rubus pensilvanicus Poir., 1993 Utech, F.H. 93-1227
Rubus phoenicolasius Maxim., 1994 Utech, F.H. 94-738 Asia
Rubus plicatifolius Blanch., 1902 Holmes, K.R. s.n.
Rubus rosa Bailey, 1907 Jennings, O.E. and Jennings, G.K. s.n.
Sorbus americana Marsh., 1929 Van Dersal, W.R. 585
Sorbus aucuparia L., 1929 Graham, E.H. s.n. Europe

Westmoreland Co. s.n. G5:S2

Salicaceae

Populus alba L., 1955 Diehl, A. s.n. Eurasia Populus balsamifera L. ssp. balsamifera, 1926 Jennings, O.E. and Jennings, G.K. s.n. G5:S1 Populus deltoides Bartr. ex Marsh. ssp. deltoides, 2009 Speedy, L. and Metzgar, T. 09-729 Populus grandidentata Michx., 1994 Utech, F.H. 94-254 Populus tremuloides Michx., 1991 Utech, F.H. 91-707 Populus x jackii Sarg., 1995 Grund, S.P. 1363 Populus x smithii Boivin, 1926 Jennings, O.E. s.n. Salix babylonica L., 1993 Utech, F.H. 93-946 China Salix bebbiana Sarg., 1947 Buker, W.E. s.n. Salix caroliniana Michx., 1901 Holmes, K.R. s.n. G5:S1 Salix discolor Muhl., 1915 Bright, J. s.n. Salix eriocephala Michx., 1994 Utech, F.H. 94-207 Salix fragilis L., 1993 Utech, F.H. 93-1043 Europe Salix humilis Marsh. var. humilis, 2009 Speedy, L. and Metzgar, T. 09-0381 Salix humilis Marsh. var. tristis (Ait.) Griggs, 1913 Jennings, O.E. s.n. Salix interior Rowlee, 1994 Utech, F.H. 94-123 Salix lucida Muhl., 1994 Utech, F.H. 94-292 Salix nigra Marsh., 2010 Speedy, L. 10-392 Salix petiolaris Sm., 1989 Utech, F.H. 89-170 G5:S4 [Salix x subsericea (Anderss.) Schneid.] Salix purpurea L., 1936 Demoise, C.W. s.n. Europe Salix sericea Marsh., 1985 Nishida, J.H., Lua, K. and Lange, L. 755

Santalaceae

Comandra umbellata (L.) Nutt. ssp. umbellata, 1937 Churchill, J.A. 176 Pyrularia pubera Michx., 2008 Speedy, M.L. 08-478 G5:S3

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Physalis longifolia Nutt. var. subglabrata (Mackenzie & Bush) Crong.,

1994 Utech, F.H. 94-2209 [Physalis subglabrata Mackenzie &

Saxifragaceae
Chrysosplenium americanum Schwein. ex Hook., 2005 Isaac, B.L., Isaac, J.A. and Paxton, W. 18636
Heuchera americana L. var. americana, 1997 Utech, F.H. 97-315
Micranthes micranthidifolia (Haw.) Small, 2008 Isaac, B.L. and Isaac, J.A. 19542 G5:S4 [Saxifraga micranthidifolia (Haw.) Steud.]
Micranthes pensylvanica (L.) Haw., 1987 Utech, F.H. 87-186 [Saxifraga pensylvanica L.]
Micranthes virginiensis (Michx.) Small, 1997 Utech, F.H. 97-023 [Saxifraga virginiensis Michx.]
Mitella diphylla L., 2008 Speedy, L. 08-0197
Tiarella cordifolia L. var. cordifolia, 1994 Utech, F.H. 94-487

Scrophulariaceae

Physalis pubescens L. var. integrifolia (Dunal) Waterfall, 1960 Shaw s.n.
Solanum carolinense L. var. carolinense, 1998 Utech, F.H. 98-82
Solanum dulcamara L. var. dulcamara, 1998 Utech, F.H. 98-248 Eurasia
Solanum lycopersicum L. var. lycopersicum, 1992 Utech, F.H. 92-2764 South America [Lycopersicon esculentum P. Mill.]
Solanum nigrum L., 1992 Utech, F.H. 92-2780 Europe
Solanum rostratum Dunal, 1952 Wuslich, J. s.n. [Solanum cornutum auct. non Lam.]

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Agalinis purpurea (L.) Pennell, 1900 Holmes, K.R. s.n. Agalinis tenuifolia (Vahl) Raf. var. tenuifolia, 1929 Van Dersal, W.R. 467 Aureolaria flava (L.) Farw. var. flava, 1925 Jennings, O.E. s.n. Aureolaria laevigata (Raf.) Raf., 1995 Utech, F.H. 95-811 Aureolaria pedicularia (L.) Raf. var. intercedens Pennell, 1919 Jennings, O.E., Jennings, G.K., Bright, J. and McKee, A.E. s.n. Aureolaria virginica (L.) Pennell, 1900 Shafer, J.A. s.n. Chaenorhinum minus (L.) Lange, 1998 Utech, F.H. 98-26 Europe Chelone glabra L., 1995 Utech, F.H. 95-761 Collinsia verna Nutt., 2010 Speedy, L. and Bowers, M. 10-086 G5:S4 Digitalis purpurea L., 1993 Utech, F.H. 93-1355 Europe Gratiola neglecta Torr., 2010 Speedy, L. 10-369 Linaria vulgaris P. Mill., 1998 Utech, F.H. 98-191 Eurasia Lindernia dubia (L.) Pennell var. dubia, 1995 Grund, S.P. 1358 Melampyrum lineare Desr. var. lineare, 2010 Speedy, L. 10-329 [Melampyrum lineare Desr. var. americanum (Michx.) Beauverd] Mimulus alatus Ait., 1949 Buker, W.E. s.n. Mimulus ringens L. var. ringens, 1998 Utech, F.H. 98-300 Nuttallanthus canadensis (L.) D.A. Sutton, 1995 Utech, F.H. 95-157 [Linaria canadensis (L.) Chaz.] Pedicularis canadensis L. ssp. canadensis, 1994 Utech, F.H. 94-591 Penstemon digitalis Nutt. ex Sims, 2008 Speedy, M.L. 08-494 Penstemon hirsutus (L.) Willd., 1994 Utech, F.H. 94-903 Penstemon laevigatus Ait., 1995 Utech, F.H. 95-166 G5:S3 Scrophularia lanceolata Pursh, 1995 Wagner, J.D. and Smith, L.L. 945 Scrophularia marilandica L., 1998 Utech, F.H. 98-205 Verbascum blattaria L., 1998 Utech, F.H. 98-121 Eurasia Verbascum thapsus L., 1994 Utech, F.H. 94-1414 Europe Veronica americana Schwein. ex Benth., 1994 Utech, F.H. 94-1124 Veronica arvensis L., 1997 Utech, F.H. 97-378 Eurasia Veronica filiformis Sm., 2008 Speedy, L. 08-0195 Eurasia Veronica hederifolia L., 1903 Holmes, K.R. s.n. Eurasia Veronica officinalis L., 1998 Utech, F.H. 98-244 Veronica peregrina L. ssp. peregrina, 1889 Mellor, C.C. s.n. Veronica persica Poir., 1993 Utech, F.H. 93-784 Eurasia Veronica serpyllifolia L. ssp. serpyllifolia, 1993 Utech, F.H. 93-829 Europe

Sparganiaceae

Bush]

Sparganium americanum Nutt., 1995 Grund, S.P. 1367 Sparganium eurycarpum Engelm. ex A. Gray, 1904 Jennings, O.E. s.n.

Staphyleaceae

Staphylea trifolia L., 2008 Speedy, L. 08-0153

Thymelaeaceae

Dirca palustris L., 2010 Speedy, L. and Metzgar, T. 10-191

Tiliaceae

Tilia americana L. var. americana, 1998 Utech, F.H. 98-90 Tilia americana L. var. heterophylla (Vent.) Loud., 1992 Utech, F.H. 92-1953

Typhaceae

Typha angustifolia L., 1993 Utech, F.H. 93-2287 Chile Typha latifolia L., 1998 Utech, F.H. 98-286

Ulmaceae

Celtis occidentalis L., 2010 Speedy, L. 10-568 Celtis tenuifolia Nutt., 1902 Shafer, J.A. s.n. Ulmus americana L., 2008 Speedy, M.L. 08-0014 Ulmus rubra Muhl., 2008 Speedy, M.L. 08-0009

Veronicastrum virginicum (L.) Farw., 1991 Utech, F.H. 91-676

Urticaceae

Boehmeria cylindrica (L.) Sw., 1994 Utech, F.H. 94-1997 Laportea canadensis (L.) Weddell, 1994 Utech, F.H. 94-1924 Parietaria pensylvanica Muhl. ex Willd., 1991 Utech, F.H. 91-648 Pilea pumila (L.) A. Gray, 1996 Utech, F.H. 96-370 Urtica dioica L. ssp. dioica, 1994 Utech, F.H. 94-2013 Europe Urtica dioica L. ssp. gracilis (Ait.) Seland., 1897 Shafer, J.A. s.n.

Valerianaceae

Valeriana pauciflora Michx., 1995 Wagner, J.D. and Smith, L.L. 915 Valerianella chenopodiifolia (Pursh) DC., 1996 Utech, F.H. 96-4 Valerianella locusta (L.) Lat., 1980 Utech, F.H. 80-100 Europe Valerianella umbilicata (Sullivant) Wood, 2010 Speedy, L. 10-122

Verbenaceae

Phryma leptostachya L., 2010 Speedy, L., Metzgar, T. and Byers, D. 10-506

Simaroubaceae

Ailanthus altissima (P. Mill.) Swingle, 1993 Utech, F.H. 93-2313 Asia

Smilacaceae

Smilax glauca Walt., 2009 Speedy, M.L. 09-867 Smilax herbacea L., 1997 Utech, F.H. 97-490 Smilax hispida Muhl. ex Torr., 1992 Utech, F.H. 92-3171 Smilax rotundifolia L., 2008 Speedy, M.L. 08-320

Solanaceae

Datura stramonium L., 1994 Utech, F.H. 94-1999 Lycium barbarum L., 1992 Utech, F.H. 92-3260 Eurasia Physalis heterophylla Nees var. heterophylla, 1982 Mulvihill, R.S. and Leberman, R.C. s.n. Verbena hastata L., 1998 Utech, F.H. 98-288 Verbena simplex Lehm., 1993 Utech, F.H. 93-1523 Verbena stricta Vent., 1992 Utech, F.H. 92-2406 Verbena urticifolia L., 1998 Utech, F.H. 98-282

Violaceae

Hybanthus concolor (T.F. Forst.) Spreng., 1996 Mulvihill, R.S. s.n.
Viola affinis Le Conte, 1992 Utech, F.H. 92-665
Viola arvensis Murr., 1994 Utech, F.H. 94-1182 Europe
Viola bicolor Pursh, 1994 Utech, F.H. 94-290
Viola blanda Willd. var. blanda, 1995 Utech, F.H. 95-88
Viola canadensis L. var. canadensis, 1996 Grund, S., Jones, S., and Hill, R. 1510
Viola cucullata Ait., 1995 Wagner, J.D. and Smith, L.L. 933

Viola hastata Michx., 2002 Isaac, B.L. and Isaac, J.A. 14437 Viola hirsutula Brainerd, 1956 Henry, L.K. s.n. Viola labradorica Schrank, 2010 Speedy, L. 10-211 Viola lanceolata L. ssp. lanceolata, 1902 Holmes, K.R. s.n. Viola macloskeyi Lloyd ssp. pallens (Banks ex DC.) M.S. Baker, 2010 Speedy, L. and Metzgar, T. 10-166 [Viola pallens (Banks ex Ging) Brainerd]

Viola odorata L., 1984 Capp, M.S. s.n. Europe

Viola palmata L., 2010 Speedy, L., Metzgar, T., Shapira, E., Shapira, D. and Nixon, A. 10-066 [Viola triloba Schwein. var. dilata auct. non (Ell.) Brainerd p.p.]

Viola pubescens Ait., 2008 Speedy, L. 08-0192 [Viola pubescens Ait. var. scabriuscula Schwein. ex Torr. & A. Gray]

Viola rostrata Pursh, 1994 Utech, F.H. and Kawano, S. 94-310

Pinus rigida P. Mill., 2010 Speedy, L., Davis, J., Byers, D. and Vechter, T. 10-351-1
Pinus strobus L., 2008 Speedy, M.L. 08-1335-2
Pinus sylvestris L., 2010 Speedy, L., Davis, J., Metheny, K. and Byers, D. 10-042-1 Eurasia
Pinus virginiana P. Mill., 1916 Jennings, O.E. and Jennings, G.K. s.n.
Tsuga canadensis (L.) Carr., 2008 Speedy, M.L. 08-0011

Taxaceae

Taxus canadensis Marsh., 1963 Monk, P. s.n. G5:S3S4

PTERIDOPHYTES

Aspleniaceae

Asplenium bradleyi D.C. Eat., 2005 Paxton, W. and Poglein, B. s.n.

Viola rotundifolia Michx., 2008 Speedy, M.L. 08-323 Viola sagittata Ait. var. ovata (Nutt.) Torr. & A. Gray, 1984 McKinney, L.E. 1031-4

Viola sagittata Ait. var. sagittata, 1984 Mulvihill, R.S. s.n. Viola sororia Willd., 1997 Utech, F.H. 97-370

Viola striata Ait., 2008 Speedy, L. 08-0196

Viola tripartita Ell., 1909 Jennings, O.E. s.n. G5:SH

Viola walteri House var. appalachiensis (Henry) McKinney ex S.P. Grund & B.L. Issac, 2010 Speedy, L., Davis, J., Metheny, K. and Byers, D. 10-040 G4:S3S4

Viola x bissellii House, 1956 Henry, L.K. s.n. [Viola x conturbata House] Viola x eclipes H.E. Ballard, 1992 Utech, F.H. 92-666 Viola x porteriana Pollard (pro sp.), 1930 VanDersal, W.R. 1429 Viola x primulifolia L. (pro sp.), 1988 Leberman, R.C. and Mulvihill, R.S. s.n.

Viola x subsinuata Greene, 1909 Jennings, G.K. s.n.

Vitaceae

Parthenocissus quinquefolia (L.) Planch., 1993 Utech, F.H. 93-2208

G4:S1

Asplenium montanum Willd., 2010 Speedy, L., Vechter, T. and Westmoreland Bird & Nature Club 10-522
Asplenium platyneuron (L.) B.S.P., 1994 Utech, F.H. 94-1990
Asplenium rhizophyllum L., 2008 Speedy, M.L. 08-0001
Asplenium trichomanes L. ssp. trichomanes, 2008 Speedy, M.L. 08-0002

Dennstaedtiaceae

Dennstaedtia punctilobula (Michx.) T. Moore, 2002 Isaac, B.L. and Isaac, J.A. 14429 Pteridium aquilinum (L.) Kuhn var. latiusculum (Desv.) Underwood ex Heller, 1997 Utech, F.H. 97-982

Dryopteridaceae

Athyrium angustum (Willd.) K. Presl, 1998 Utech, F.H. 98-263 [Athyrium filix-femina (L.) Roth ssp. angustum (Willd.) Clausen, Athyrium filix-femina (L.) Roth var. michauxii (Spreng.) Farw.] Athyrium asplenioides (Michx.) A.A. Eat., 1920 Jennings, O.E. and Jennings, G.K. s.n. [Athyrium filix-femina (L.) Roth ssp. asplenioides (Michx.) Hultén] Cystopteris bulbifera (L.) Bernh., 2009 Speedy, L. 09-0468 Cystopteris protrusa (Weatherby) Blasdell, 2008 Speedy, M.L. 08-749 Cystopteris tenuis (Michx.) Desv., 2008 Speedy, M.L. 08-497 Deparia acrostichoides (Sw.) M. Kato, 1996 Grund, S. 1672 [Athyrium thelypterioides (Michx.) Desv.] Diplazium pycnocarpon (Spreng.) Broun, 1997 Wagner, J.D. and Smith, L.L. 1770 [Athyrium pycnocarpon (Spreng.) Tidestrom] Dryopteris carthusiana (Vill.) H.P. Fuchs, 2002 Isaac, B.L. and Isaac, J.A. 14423 Dryopteris cristata (L.) A. Gray, 2010 Speedy, L. and Nusser, J. 10-482 Dryopteris goldiana (Hook. ex Goldie) A. Gray, 2005 Isaac, B.L., Isaac, J.A. and Paxton, W. 18639 Dryopteris intermedia (Muhl. ex Willd.) A. Gray, 2002 Mulvihill, R.S. s.n. Dryopteris marginalis (L.) A. Gray, 1994 Utech, F.H. 94-1995 Dryopteris x boottii (Tuckerman) Underwood (pro sp.), 1981 Leberman, R.C. s.n. Dryopteris xtriploidea Wherry, 1995 Grund, S.P. 1006

Parthenocissus tricuspidata (Sieb. & Zucc.) Planch., 1994 Utech, F.H.

94-756 China and Japan

Vitis aestivalis Michx. var. bicolor Deam, 1997 Utech, F.H. 97-399 Vitis cinerea (Engelm.) Engelm. ex Millard var. baileyana (Munson)

Comeaux, 1994 Utech, F.H. 94-792 **G4G5TNR:SH** Vitis labrusca L., 1997 Utech, F.H. 97-303 Vitis riparia Michx., 1994 Isaac, J.A. 6059 Vitis vulpina L., 1994 Isaac, J.A. 6062 Vitis x novae-angliae Fern. (pro sp.), 1912 Jennings, O.E. s.n. **G4G5Q:S1**

Zygophyllaceae Tribulus terrestris L., 1992 Utech, F.H. 92-2690 Mediterranean

GYMNOSPERMS

Cupressaceae

Chamaecyparis thyoides (L.) B.S.P., 1968 Leberman, R.C. s.n. G4:SX Juniperus communis L. var. depressa Pursh, 1991 Utech, F.H. 91-710 G5T5:S1

Juniperus virginiana L. var. virginiana, 1988 Utech, F.H. 88-1108 Thuja occidentalis L., 1983 Utech, F.H. and Ohara, M. 83-512

Pinaceae

Larix decidua P. Mill., 2010 Speedy, L. 10-661-1 Europe Larix Iaricina (Du Roi) K. Koch, 1963 Monk, P. s.n. Picea abies (L.) Karst., 1995 Grund, S.P. 1399 Europe Picea glauca (Moench) Voss, 1972 Henry, L.K. s.n. Picea mariana (P. Mill.) B.S.P., 2010 Speedy, L., Davis, J., Byers, D. and Vechter, T. 10-347-1 Picea pungens Engelm., 1995 Utech, F.H. 95-139 Pinus resinosa Ait., 2010 Speedy, L., Davis, J., Metheny, K. and Byers, D. 10-037-1 Gymnocarpium dryopteris (L.) Newman, 2010 Speedy, L., Vechter, T. and Westmoreland Bird & Nature Club 10-524
Matteuccia struthiopteris (L.) Todaro, 2008 Speedy, M.L. 08-630
Onoclea sensibilis L., 1998 Utech, F.H. 98-289
Polystichum acrostichoides (Michx.) Schott, 2002 Isaac, B.L. and Isaac, J.A. 14453
Woodsia obtusa (Spreng.) Torr. ssp. obtusa, 2008 Speedy, M.L. 08-498

Equisetaceae

Equisetum arvense L., 1993 Utech, F.H. 93-246 Equisetum hyemale L. var. affine (Engelm.) A.A. Eat., 2010 Speedy, L. and Metzgar, T. 10-084

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Isoetaceae

Isoetes engelmannii A. Braun, 2008 Speedy, M.L., Isaac, J.A., Isaac, B.L. & BSPW 08-1020

Lycopodiaceae

Dendrolycopodium dendroideum (Michx.) Haines, 1966 McMenamin, E. s.n. [Lycopodium dendroideum Michx.]

Dendrolycopodium hickeyi (W.H. Wagner, Beitel & Moran) Haines, 2002 Isaac, B.L. and Isaac, J.A. 14464 [Lycopodium hickeyi W.H. Wagner, Beitel & Moran]

Dendrolycopodium obscurum (L.) Haines, 2002 Isaac, B.L. and Isaac,

J.A. 14455 [Lycopodium obscurum L.]

Diphasiastrum digitatum (Dill. ex A. Braun) Holub, 2002 Isaac, B.L. and Isaac, J.A. 14458 [Lycopodium digitatum Dill. ex A. Braun] Diphasiastrum tristachyum (Pursh) Holub, 1995 Grund, S.P. 1335 [Lycopodium tristachyum Pursh]

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ACKNOWLEDGMENTS

Our thanks go to the Wild Resource Conservation Fund of the Pennsylvania Department of Conservation and Natural Resources for partial funding of the field work. We would also like to thank the reviewers for such favorable comments. We are also thankful to Amanda Juretic for data entry. For field work assistance, we thank Mark Bowers, Dick Byers, Janice Davis, Kim Metheny, James Nusser, Tom Pearson, James Speedy, Tim Vechter, and Delia White. Landowners who provided permission to explore their property include Tom and Kim Metzgar, the Shapira family, Lewis Stout, Brian Zwergel, the Municipality of Murrysville and the Westmoreland County Department of Parks and Recreation. The assistance of Tom Metzgar in targeting underexplored areas was invaluable.

We would also like to thank Dorothy E. Pearth and Frederick H. Utech, both former Curators of Botany at the Carnegie Museum of Natural History, for their contributions to the checklist of Westmoreland County. Dorothy E. Pearth obtained a Bachelor of Science degree from the University of Pittsburgh. She began her career at the Carnegie Museum of Natural History as a secretary in the 1940s under Dr. M. Graham Netting. A few years later she transferred to the Botany Section and became Assistant Curator of Botany in 1951 from which she retired in 1978 as Associate Curator of Botany Emeritus. Among her publications are Additions to the Flowering Plants of Western Pennsylvania (those not included in the Jennings' Flora of 1953) and The Flora of Westmoreland County Pennsylvania. This latter publication is a type-written document that was photocopied and forwarded to selected locations and therefore did not have a wide circulation. Frederick H. Utech obtained a Ph.D. degree from Washington University in St. Louis, Missouri, in 1973. He started at the Carnegie Museum of Natural History as an Associate Curator in 1976 and was appointed Curator for the Section of Botany in 1988. From 1999 until his retirement in 2011, he was a Principal Research Scientist at the Hunt Institute for Botanical Documentation at Carnegie Mellon University. Among his publications is the Checklist of the Vascular Plants of Powdermill Nature Reserve, Westmoreland County, Pennsylvania. Dr. Utech collected extensively in Westmoreland County for 20 years; within the herbarium there are 9,298 specimens from him for this area.

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